

Coos County Transportation System Plan



March 2011





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Prepared for

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LIST OF ACRONYMS

ADT	Average Daily Traffic
ARRA	American Recovery and Reinvestment Act
CAC	Citizen Advisory Committee
CCAT	Coos County Area Transit
CIP	Capital Improvement Plan
CORP	Central Oregon and Pacific Railroad
DHV	Design Hourly Volume
FTA	Federal Transit Authority
HBRR	Highway Bridge Replacement and Rehabilitation
HCM	Highway Capacity Manual
HDM	Highway Design Manual
HEP	Hazard Elimination Program
IOF	Immediate Opportunity Fund
JTA	Jobs and Transportation Act
LID	Local Improvement Districts
LOS	Level of Service
MP	Milepoint
MPO	Metropolitan Planning Organization
NBI	National Bridge Inventory
OAR	Oregon Administrative Rule
OCBR	Oregon Coast Bike Route
ODOT	Oregon Department of Transportation
OEA	Office of Economic Analysis
OED	Oregon Employment Department
OHP	Oregon Highway Plan
ORS	Oregon Revised Statutes
OTIA	Oregon Transportation Investment Act
PCI	Pavement Condition Index
SDC	System Development Charge
SHSP	Strategic Highway Safety Plan
SIP	Safety Investment Program
SPIS	Safety Priority Index System
SPWF	Special Public Works Fund
STIP	Statewide Transportation Improvement Program
STP	Surface Transportation Program
SWORA	Southwest Oregon Regional Airport
TAC	Transportation Advisory Committee
TPAU	Transportation Planning Analysis Unit
TPR	Transportation Planning Rule
TSP	Transportation System Plan
UGB	Urban Growth Boundary
V/C	Volume-to-Capacity

1. INTRODUCTION

The Coos County Transportation System Plan (TSP) guides the management of existing transportation facilities and the design and implementation of future facilities for the next 20 years. This Transportation System Plan constitutes the transportation element of the County's Comprehensive Plan and satisfies the requirements of the Oregon Transportation Planning Rule established by the Department of Land Conservation and Development. It identifies and prioritizes transportation projects for inclusion in the Oregon Department of Transportation's (ODOT's) Statewide Transportation Improvement Program (STIP).

Study Area

Figure 1-1 shows a map of Coos County, including boundaries for each incorporated city. The study area for the TSP includes all areas of the county lying outside of city urban growth boundaries (UGBs). The roadway network within Coos County serves many modes of travel, including motor vehicles, bicycles, pedestrians, transit, and freight. It connects communities, serves adjacent land uses, and provides access to other modes of travel as well.

Topographically, Coos County is a complex mix of undulating mountains and winding rivers. In this rugged terrain, the road development typically follows the natural course of least resistance. Thus, many roads follow streams and rivers as they wind from their sources to their deltas. The riverbeds provided flatter areas within which to build roads and it was quite natural for the roadway network to follow these areas.

Figure 1-2 illustrates the general zoning in Coos County. The majority of the county is zoned as resource lands (Forest, Exclusive Agriculture, Open Space/Natural Use) but there is some land zoned for development (Commercial Industrial, Rural Residential, Resort), particularly close in to the cities.

Planning Process

The Coos County TSP was developed through a series of technical analyses combined with systematic input and review by the Transportation Advisory Committee (TAC), Citizens Advisory Committee (CAC), ODOT, and the public. The committees consisted of staff, elected and appointed officials, residents, and business people from the county.

Key elements of the process include:

- Existing Plans Policies Review (Appendix)
- Goals and Objectives (Chapter 2)
- Existing Transportation System Inventory and Deficiencies (Chapters 3 and 4)
- Future Transportation System Deficiencies(Chapter 5)
- Transportation System Plan (Chapter 6)
- Funding Options and Financing Plan (Chapter 7)

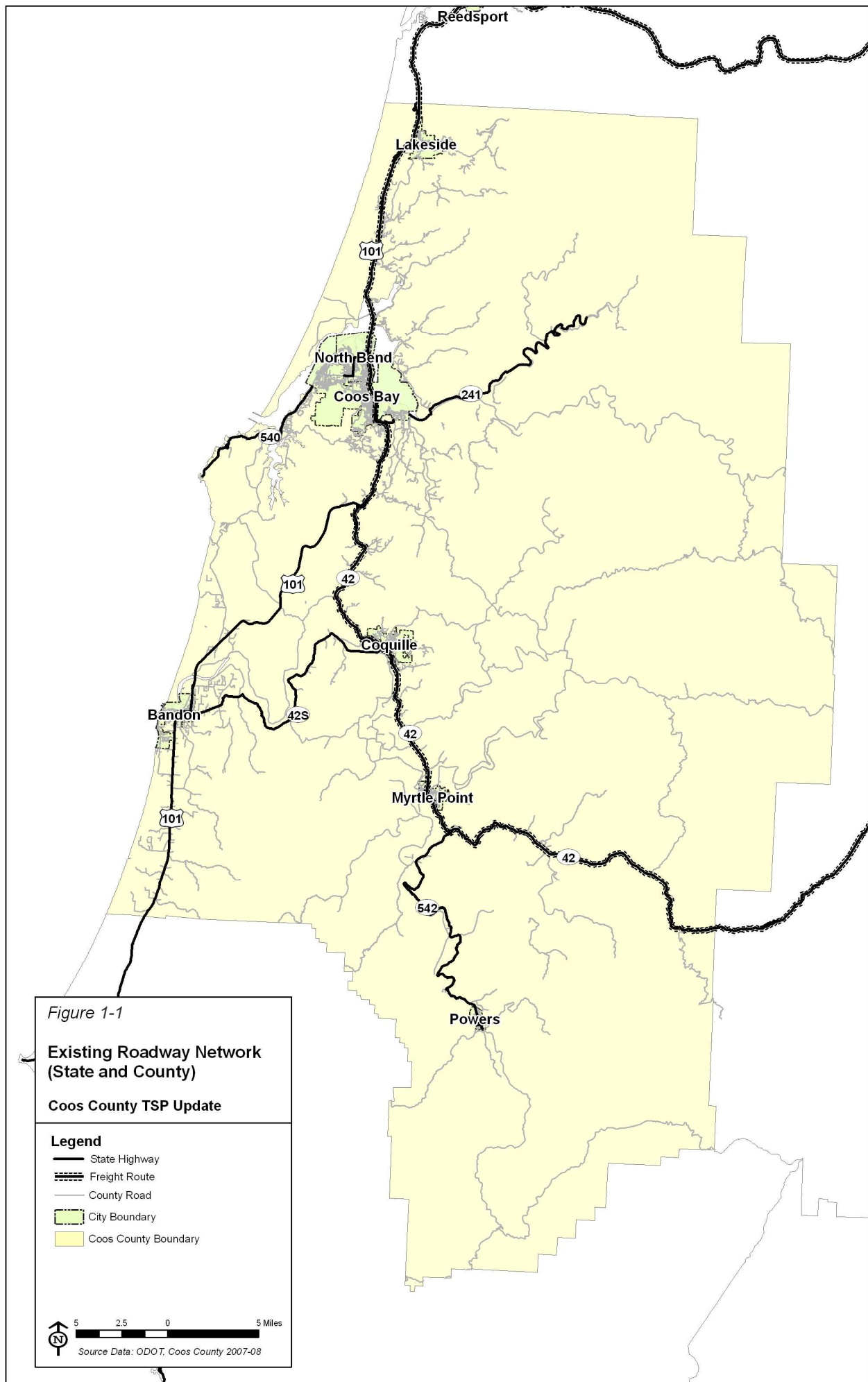
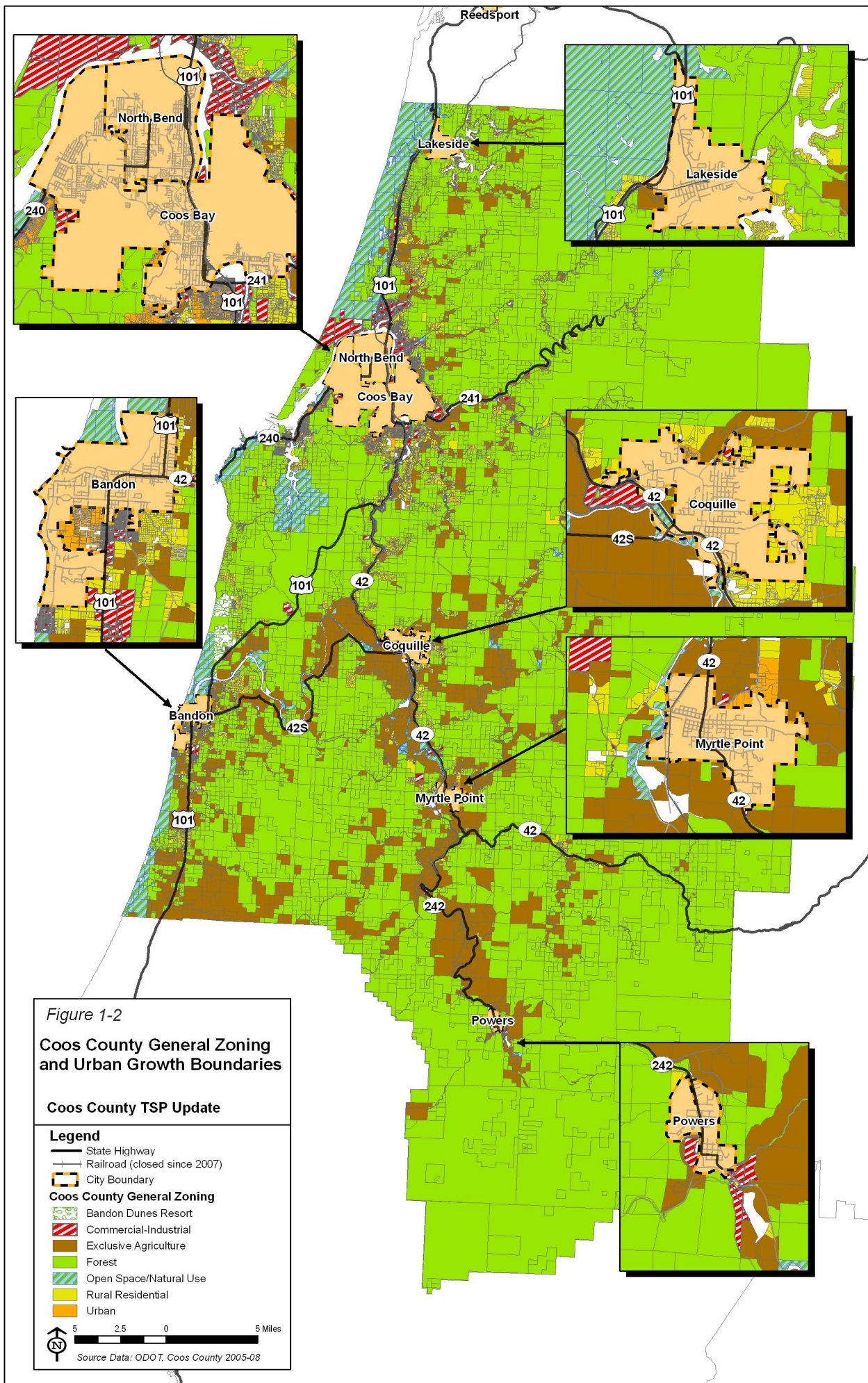


Figure 1-1
**Existing Roadway Network
 (State and County)**
 Coos County TSP Update

Legend

- State Highway
- - - Freight Route
- County Road
- - - City Boundary
- Coos County Boundary

5 2.5 0 5 Miles
 Source Data: ODOT, Coos County 2007-08



Once adopted, the TSP will bring the county into compliance with the Transportation Planning Rule (TPR). In addition to the plan document, the necessary comprehensive plan amendments and supporting ordinances to implement the TSP will be identified. This will help Coos County to more effectively focus on identified goals and objectives by establishing a consistent planning framework in alignment with community and state goals and policies.

Community Involvement

Community involvement is an integral component in the development of a TSP. Several different techniques were utilized to involve the local jurisdictions, ODOT, and the general public.

A Transportation Advisory Committee (TAC) provided guidance on technical issues and direction regarding policy issues to the consultant team. Staff members from the local jurisdictions and ODOT served on this committee. This group met six times during the course of the project.

A Citizens Advisory Committee (CAC) comprised of local stakeholders from businesses, the public, and agencies, also provided input and feedback. This group was contacted at the beginning of the project to discuss transportation needs and issues facing Coos County, and also at key milestones throughout the planning process.

Another part of the community involvement effort consisted of community meetings within Coos County. During these meetings, the general public was invited to learn about the TSP planning process and provide input on transportation issues and concerns.

Goals and Objectives

Based on input from the TAC and stakeholders, goals and objectives were defined for the TSP. These goals and objectives were used to make decisions about various potential improvement projects. They are described in Chapter 3.

Review of Existing Plans and Policies

To begin the planning process, all applicable Coos County transportation and land use plans and policies were reviewed and an inventory of public facilities was conducted. The purpose of these efforts was to understand the history of transportation planning in the county, including the street system improvements planned and implemented in the past, and how the county is currently managing its ongoing development. Existing plans and policies are described in the Appendix of this report.

The following state documents were reviewed as they relate to the development of TSPs or Coos County transportation facilities:

- Transportation Planning Rule - Statewide Planning Goal 12 and OAR 660, Division 12
- OAR 734, Division 51 (Highway Approaches, Access Control, Spacing Standards and Medians) (Amended 2007)

- Oregon Transportation Plan (2006)
- Oregon Highway Plan (1999, Amended July 2006)
- Highway Design Manual (HDM) (2003, Revised 2008)
- Oregon Bicycle and Pedestrian Plan (1995)
- Oregon Transportation Safety Action Plan (2004)
- Oregon Aviation Plan (2000)
- Oregon Rail Plan (2001)
- Oregon Public Transportation Plan (1997)
- Statewide Transportation Improvement Program (2010 – 2013)

Existing Transportation System Inventory

The inventory of existing facilities catalogs all modes of transportation in the current system. The results of the inventory are described in Chapter 3, while Chapter 4 describes how the system operates.

Future Transportation System Demands

The TPR requires the TSP to address a 20-year forecasting period. The overall forecasting process and identified deficiencies are described in Chapter 5.

Transportation System Plan

The Transportation System Plan addresses each mode of transportation and provides an overall implementation program. The street system plan was developed from the forecasting and potential improvement evaluation described above. The bicycle and pedestrian plans were developed based on current usage, land use patterns, and the requirements set forth by the Transportation Planning Rule. The public transportation, air, water, rail, and pipeline plans were developed based on discussions with the owners and operators of those facilities. Chapter 6 details the plan elements for each mode.

Funding Options

Coos County has developed a financially-feasible and prioritized list of transportation projects to implement over the 20-year planning period. Chapter 7 summarizes existing budgets; funding sources available from the local, state and federal levels of government; and the appropriateness of the available sources to fund specific projects. This is followed by a funding strategy intended to assist Coos County's to fund the recommended facility improvements.

2. GOALS AND OBJECTIVES

The Coos County Comprehensive Plan includes the following transportation goal:

“Coos County shall strive to provide and encourage a transportation system that promotes safety and convenience for citizens and travelers and that strengthens the local and regional economy by facilitating the flow of goods and services.”

This overarching Comprehensive Plan goal provides a summary of who is served by the county transportation system and how the transportation service should be provided. Citizens of the county, travelers to and through the area, and freight transporters must all be served by the system and, although not specifically called out, all modes of travel should be safe and as convenient as possible.

The goals and objectives in this TSP provide the guiding principles for the planning and management of the Coos County transportation system. They were developed from the overall transportation goal and applicable county and state land use and transportation planning regulations.

Goal 1: Mobility

Plan and develop a roadway system that links communities, neighborhoods, and businesses and addresses the existing and future transportation needs of moving both people and goods in throughout the region.

Objectives:

- Provide an interconnected street network that allows for reasonably direct travel and identifies and establishes parallel routes for highway facilities during periods of high demand or when slides/geological hazards affect through traffic operations.
- Establish operational standards that can be used to identify and prioritize how and where transportation funds should be invested in maintaining and improving the transportation network.
- Establish street standards and the procedures for enforcing compliance through county ordinance and code.
- Maintain existing roadways and identify improvements to address existing operational and safety deficiencies.
- Facilitate freight travel by identifying key freight routes and maintaining efficient through movement in these corridors.
- Maintain roadways that serve as school bus routes to minimize service and safety impacts due to poor road surface conditions.
- Require consideration of project elements, such as culverts and raised road beds that would address flood plain issues during new construction and roadway improvement projects.

- Provide for future growth through planning and management of the transportation system.
- Consider the transportation needs of both local and regional travelers (tourists) in the County.
- Promote intergovernmental coordination among Coos County, the Oregon Department of Transportation, the US Forest Service, the Federal Highway Administration, and all the cities within Coos County.

Goal 2: Multimodal System

Provide a multimodal transportation system that accommodates the needs of all users

Objectives:

- Support efforts to maintain current transit service and plan for future expanded transit service by sustaining funding and seeking consistent state support.
- Plan safe and convenient bicycle and pedestrian networks that connect between residential area, schools, and other activity centers.
- Incorporate bicycle and pedestrian elements, such as sidewalks and bike lanes or shoulders, in roadway upgrades.
- Protect and enhance airport facilities by developing regulations to reduce hazards and promote compatible land uses in surrounding areas and coordinating with the Oregon Department of Aviation, Southwest Oregon Regional Airport, other regional, local, and remote aviation facilities, and affected cities.
- Preserve and enhance the existing rail corridor between Eugene and the Bunker Hill industrial area through cooperation with the Oregon Rail Division and the Port of Coos Bay.
- Support opportunities for developing intermodal connections between rail, highway, and water facilities with particular focus on enhancing development of Port of Coos Bay facilities.

Goal 3: Livability

Provide a transportation system that enhances community livability and promotes economic development while minimizing environmental impacts.

Objectives:

- Minimize congestion on major travel routes by maximizing efficiency of the existing system, providing a network of travel routes, and encouraging the use of alternative modes of travel.
- Balance the need for accessibility to adjacent land uses with the need to provide capacity on major travel routes.

- Protect natural features and historic sites, preserve agricultural and forest land, and avoid, minimize, or mitigate impacts associated with transportation projects.
- Work to preserve existing neighborhoods when developing roadway capacity improvements.
- Coordinate land use and transportation planning decisions to maximize the efficiency of public infrastructure investments.
- Provide a process to educate and involve the public in the planning and funding for future transportation system improvements.

Goal 4: Safety

Promote the safety of current and future travel modes for all users.

Objectives:

- Provide a transportation system that allows adequate emergency vehicle access to all land uses.
- Maintain existing emergency routes, including lifeline routes and tsunami evacuation routes.
- Establish roadway design standards to reduce frequency and severity of motor vehicle crashes.
- Review crash patterns and implement improvements at locations identified as priority through the state rating system.
- Identify and improve intermodal conflict points, including rail crossings and pedestrian/bicycle crossings of major roadways near transit stops, schools, and other activity centers.
- Coordinate between transportation service providers to identify and address existing safety concerns and prevent the creation of future conflict points.

Goal 5: Funding

Identify reasonable and equitable funding mechanisms for improvements identified in the TSP

Objectives

- Develop a financing program that establishes priorities and identifies funding mechanisms for implementation.
- Seek long-term funding source(s) for basic roadway maintenance.
- Require development to mitigate direct traffic impacts and establish the mechanisms for enforcing compliance through county ordinance and code.
- Consider the creation of a traffic impact fee program or system development charge to address the indirect traffic impacts on the transportation system created by new development.

- Allow formation of road districts to upgrade transportation facilities.
- Coordinate with state and federal agencies and take advantage of funding programs for roadway improvements.
- Work with local jurisdictions to establish cooperative road improvement programs and jurisdictional transfers within urban growth areas.

3. EXISTING TRANSPORTATION SYSTEM INVENTORY

Chapter 3 contains an update of the inventory of existing transportation system so that the TSP will reflect current conditions. This inventory reviews the roadway system as well as the pedestrian, bikeway, public transportation, rail, air, water, and pipeline systems as they apply to Coos County.

Roadway Network

The roadway network serves many modes of travel, including motor vehicles, bicycles, pedestrians, transit, and freight. It connects communities, serves adjacent land uses, and provides access to other modes of travel as well.

The roadway network within Coos County includes almost 1,900 miles of roadway under five jurisdictions: County, State, US Forest Service (USFS), Bureau of Land Management (BLM), and the Bureau of Indian Affairs (BIA). The breakdown of roadways by surface type and jurisdiction is summarized in Table 3-1.

Table 3-1. Summary of Roadway Mileage by Jurisdiction

Jurisdiction	Unpaved	Asphalt	Concrete	Total
State Highways ¹	0.20	157.49	3.36	161.05
Coos County ²	187.96	340.88	0.34	529.18
Bureau of Land Management ¹	892.00	212.00	0.00	1104.00
US National Forest ¹	30.00	52.00	0.00	82.00
Bureau of Indian Affairs ¹	9.00	1.00	0.00	10.00
Total	1119.16	763.37	3.70	1886.23

Notes:

1. 2007 Oregon Mileage Report. The report indicates 334.12 total add and non-add lane miles of State Highways in Coos County
2. Coos County Road Department, January 2, 2002

The Oregon Department of Transportation (ODOT) owns approximately 161 miles of roadway within the County, including the most heavily traveled routes. With the exception of a short section of OR 241, the highways are all paved. The state highways link Coos County with other areas of the state as well as provide regional connections between communities.

Coos County owns and maintains approximately 529 miles of roadway and almost 65 percent (341 miles) of the county roads have a paved surface. Fewer than 8 miles of the county roadway network lies within city boundaries.

The BLM and USFS own a combined 1,186 miles of roadway within the county, almost 63 percent of the total county mileage. Most of these roadways are gravel and serve the forest lands that dominate the county. These roadways are primarily used to access recreational and logging areas and provide emergency fire access. This TSP does not include any further description of BLM or USFS roads.

The BIA owns 10 miles of roadway within the County. These lands lie within the reservation boundaries of the Coquille Tribe.

County Roads

While the state highway system forms the backbone of the roadway network in Coos County, county roads are a vital part of the circulation system. Coos County owns and maintains 236 roads totaling approximately 529 miles of roadway.

Functional Classification

The functional classification system for the Coos County roadway network includes arterials, major collectors, minor collectors, and local streets. Coos County recently upgraded the functional classification of a number of roadways for consistency with current uses or with state classifications. The functional classification of the county network, including these recent upgrades, is shown in Figure 3-1.

The state highway system described previously serves as the arterial network within Coos County. They provide a continuous road system that distributes traffic between cities and also serves as the primary arterial corridors within cities. Although the County has no direct control over the state highways within its boundaries, the highways heavily influence traffic patterns and development.

The existing TSP describes collectors as streets connecting residential neighborhoods with smaller community centers and facilities, as well as providing access to the arterial system. Property access is generally a higher priority for collectors while through traffic movements are served as a lower priority. The county further breaks the collector category into major and minor collectors.

Major collectors generally serve higher traffic demands. They tie federal roads, minor collectors, and local roads to the arterial system. These roads also provide access to agricultural, forest, and recreational areas. As shown in Table 3-2, Coos County has 38 major collectors totaling approximately 217 miles of roadway. All of the major collectors are at least partially paved and 31 are paved their entire length. Most of the paved major collectors are between 17 and 25 feet wide which does not allow for much paved shoulder, thus any bicycles or pedestrians must share the travel lane with motorized vehicles.

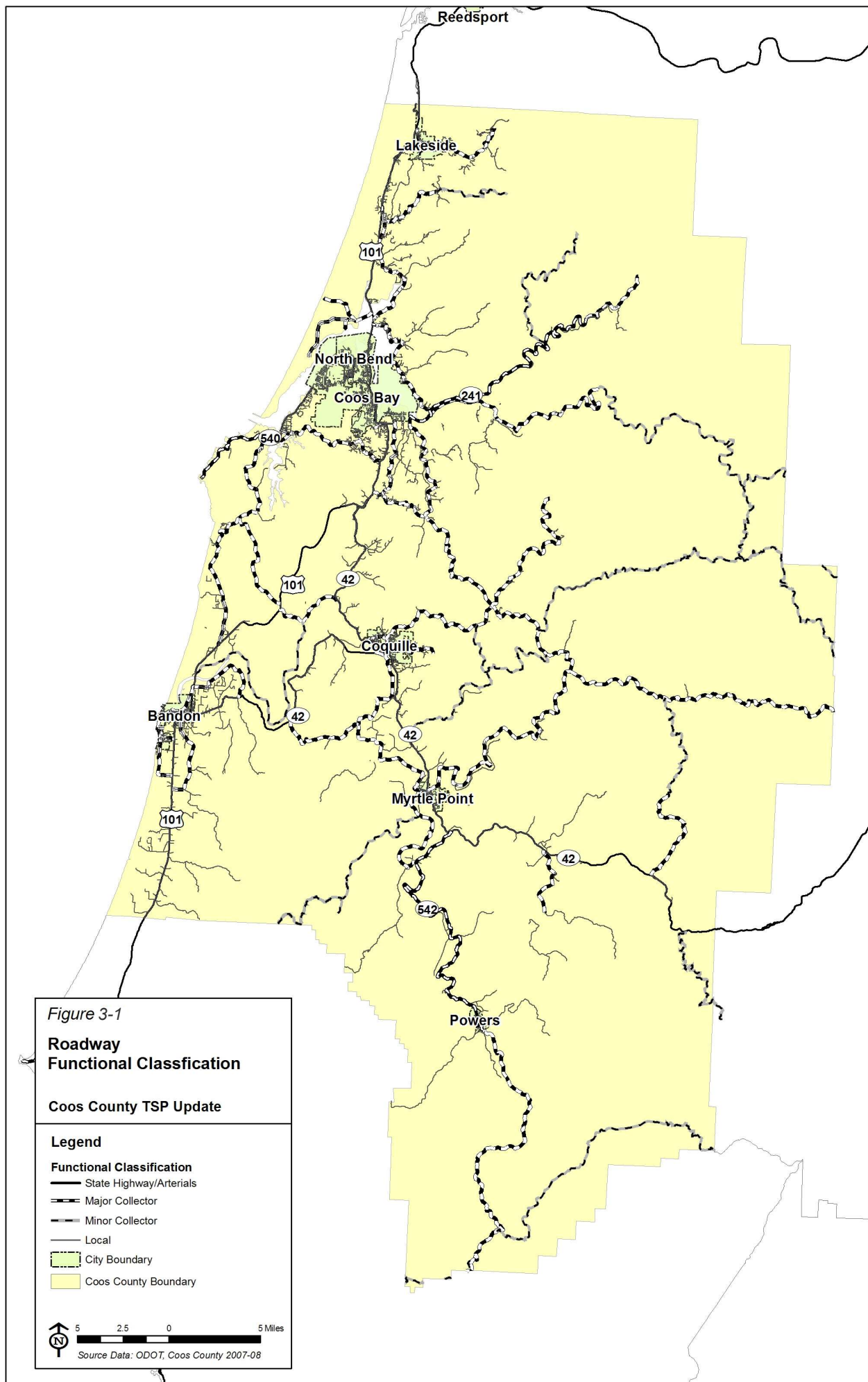


Figure 3-1
Roadway Functional Classification
Coos County TSP Update

Legend

Functional Classification

- State Highway/Arterials
- - - Major Collector
- · - Minor Collector
- Local
- - - City Boundary
- Coos County Boundary

5 2.5 0 5 Miles

Source Data: ODOT, Coos County 2007-08

Table 3-2. Major Collectors in Coos County

Alphabetical Listing (New 911 Names)	Length (miles)		Constructed Width (feet)		Right-of-Way Width (feet)	
	Paved	Gravel	Paved	Gravel	Paved	Gravel
Airport Way	0.7	-	24	-	60	-
Beach Loop Road	2.6	-	24	-	60	-
Beaver Hill Lane	1.7	-	24	-	60	-
Catching Slough Road	6.7	-	19-23	-	60	-
Coos-Sumner Lane	4.1	-	24	-	60-80	-
East Bay Road	7.9	-	24-25	-	50-60	-
Fairview - Sumner Lane	3.9	4.4	20	40	40	40
Fairview Road	15.5	-	24-42	-	60	-
Fishtrap Road	6.1	-	20-32	-	60	-
Lampa Lane	12.4	-	21-23	-	40-60	-
Landrith Road	1.7	-	21	-	60	-
Libby Lane	5.6	-	24-25	-	Min. 60	-
Lone Pine Lane	8.3	-	24	-	40-60	-
Myrtle Creek	4.3	-	22	-	60	-
North 8th St. (Lakeside)	1.0	-	32	-	60	-
North Bank Lane	5.3	-	20-24	-	60	-
North Bay Road	5.7	-	22-24	-	60	-
North Lake Lane	4.3	2.2	19-24	30	Min. 60	60-165
Old Broadbent Road	5.1	2.5	21-30	20	40-60	40
Olive Barber Road	3.5	-	24	-	60	-
Parkersburg Road	1.7	2.5	20-21	20	60	40-60
Prosper Junction Road	2.3	-	20	-	40	-
Riverside Drive	1.6	-	22	-	60	-
Rosa Road	4.3	-	22	-	60	-
Sandy Creek Road	2.7	3.3	14-22	22	60	50
Seven Devils Road	11.9	-	20-24	-	60	-
Shelley Road	2.0	-	24	-	60	-
Shinglehouse Road	2.2	-	24-40	-	40-60	-
Shutters Landing Lane	2.8	1.8	23-24	35	60	60
Sitkum Lane	25.0	10.5	20-23	20	40-60	40-60
South 8th St. (Lakeside)	0.3	-	62	-	80	-
South Coos River Lane	9.1	-	17-25	-	60	-
South Powers Road	3.9	-	24	-	60	-
TransPacific Lane	5.5	-	22-38	-	100-150	-
Two-Mile Lane	0.7	-	23	-	60	-
Walker Road	0.1	-	20	-	60	-
West Beaver Hill Road	6.2	-	23-24	-	60	-
West Central	1.2	-	48	-	60-80	-
TOTALS	190.0	27.18				

Source: Coos County Road Department, January 2, 2002

Minor collectors generally serve lower traffic demands than major collectors. They generally branch off from highway, arterial, or major collector roadways and provide access to agricultural, forest, recreational areas, and residential homes. As shown in Table 3-3, Coos County has 8 minor collectors totaling approximately 57 miles of roadway. Five of the 8 minor collectors are at least partially paved. Most of the paved minor collectors are between 19 and 24 feet wide which does not allow for much paved shoulder, thus any bicycles or pedestrians must share the travel lane with motorized vehicles.

Table 3-3. Minor Collectors in Coos County

Alphabetical Listing (New 911 Names)	Length (miles)		Constructed Width (feet)		Right-of-Way Width (feet)	
	Paved	Gravel	Paved	Gravel	Paved	Gravel
Catching Creek Lane	5.8	1.5	21-22	20	40-60	60
Fairview Road	-	3.3	22-42	22	40	40
Lee Valley Road	9.0	3.5	21-24	22	60	60
McKinley Lane	0.1	6.5	26	20	40	40
North Bank Lane	12.2	-	20-24	-	60	-
Seven Devils Road	-	3.5	20-24	30	60	60
Shutters Landing Lane	-	2.9	-	35	-	60
West Fork Millicoma Road	5.3	3.3	19-21	30	40	40
TOTALS	32.5	24.5				

Source: Coos County Road Department, January 2, 2002

Local streets, or minor streets as described in the 1999 TSP, primarily serve residential properties. Property access is the main priority; through traffic movement is not encouraged. They are designed to carry low traffic volumes. Coos County has 198 local streets totaling approximately 255 miles of roadway.

Pavement Conditions

Coos County conducted a pavement condition inventory in the spring of 2009 based on the pavement management software StreetSaver¹. The distribution of inventory data in the seven pavement condition categories used in the county inventory is summarized in Table 3-4.

Approximately 10 percent of the paved roadways in the Coos County system have Poor pavement conditions and another 1 percent have Very Poor conditions. Major collectors are in the best condition with only 5 percent in Poor condition and 0 percent in Very Poor condition. Minor collectors have the greatest percentage of road surface in Poor condition (20 percent) but none in Very Poor condition.

¹ StreetSaver® Metropolitan Transportation Commission's Pavement Management Software, v.8.

Table 3-4. Pavement Conditions Inventory – County Roads

Pavement Condition	Major Collector (miles)	Minor Collector (miles)	Local (miles)	Total (miles)
Excellent (PCI: 85-100)	5%	6%	2%	4%
Very Good (PCI: 70-85)	32%	10%	23%	27%
Good (PCI: 55-70)	26%	12%	25%	24%
Fair (PCI: 40-55)	32%	53%	34%	34%
Poor (PCI: 25-40)	5%	20%	15%	10%
Very Poor (PCI: 10-25)	0%	0%	2%	1%
Failed (PCI: 0-10)	0%	0%	0%	0%

Acronym: PCI = Pavement Condition Index ranking

Source: Coos County Road Department, May 2009.

Major and minor collector roadways with some portion of the paved surface in Poor condition are listed in Table 3-5. The roadway with the longest section of Poor pavement conditions is North Bank Lane. Lampa Lane, Old Broadbent Road, Seven Devils Road, and Sitkum Lane all have more than a mile of Poor pavement.

Table 3-5. County Roads with Poor Pavement Conditions

Major Collector Roadways		Minor Collector Roadways	
Name	Length (miles)	Name	Length (miles)
Beach Loop Road	0.72	North Bank Lane	5.6
Lampa Lane	1.32	West Fork Millicoma Road	0.5
North Bank Lane	1.30		
Old Broadbent Road	2.09		
Seven Devils Road	1.90		
Shelley Road	0.88		
Sitkum Lane	1.87		

Source: Coos County Road Department, May 2009.

State Highways

State highways form the primary road network within and through Coos County. They provide a continuous road system that distributes traffic between cities and also serves as the primary arterial corridors within cities. Although the County has no direct control over the state highways within its boundaries, the highways heavily influence traffic patterns and development.

Coos County is served by the six state highways listed in Table 3-6 and shown in Figure 3-1.

Table 3-6. State Highways

Number	Name	State Classification	State Freight Route	Federally Designated Truck Route	Scenic Byway	National Highway System	Miles
US 101 ⁵	Oregon Coast Highway	Statewide	Yes ¹	Yes	Yes	Yes	53.41
OR 42 ⁵	Coos Bay-Roseburg Highway	Statewide	Yes	Yes ²	No	Yes	42.63
OR 42S	Coquille-Bandon Highway	District	No	No	No	No	16.93
OR 241	Coos River Highway	District ³	No	No	No	Yes ³	17.45
OR 540	Cape Arago Highway	District	No	No	Yes ⁴	No	11.95
OR 542	Powers Highway	District	No	No	No	No	18.68

Notes:

1. US 101 is a freight route from the Coos-Douglas County Line at milepost 220.58 to the junction with OR 42 at milepost 244.27.
2. OR 42 is a federally designated truck route from US 101 at milepost 0.0 to the junction with OR 42S at milepost 10.85. The designation of through truck routes help provide for the efficient movement of goods while balancing and maintaining neighborhood livability, public safety, and minimizing maintenance costs of the roadway system.
3. OR 241 is a statewide highway at the junction with US 101 and is part of the National Highway System from US 101 at to the Bunker Hill Industrial Area access on Mullen Road.
4. OR 540 is a scenic byway from Shore Edge Drive at milepost 8.74 to the end of the highway at Cape Arago State Park.
5. The OHP classifies US 101 as an Expressway from 1st Street in Coos Bay (MP 239.89) to the junction with OR 42 (MP 244.27). The OHP classifies OR 42 as an Expressway from the junction with OR 42 (MP 0) to West Central Street in Coquille (MP 9.97) and then again from Filter Plant Road in Coquille (MP 13.19) to Ash Street in Myrtle Point (MP 20.53).

Source: 1999 Oregon Highway Plan, July 2006.

U.S. Highway 101 (Oregon Coast Highway)

US 101 runs north-south along the Oregon coast traversing Coos County from Douglas County to Curry County. The Oregon Highway Plan (OHP) designates US 101 within Coos County as a Statewide Highway and Scenic Byway. US 101 is part of a state freight route system that connects part of the Oregon Coast with Interstate 5 (I-5). The US 101 portion of the freight route extends from Florence to south of Coos Bay and connects with three east-west freight routes between I-5 and US 101: OR 126 from Eugene to Florence, OR 38 from about 30 miles south of Eugene to Reedsport, and OR 42 from south of Coos Bay to Roseburg. The OHP classifies US 101 as an Expressway from 1st Street in Coos Bay (MP 239.89) to the junction with OR 42 (MP 244.27). It is also a federally designated truck route and part of the National Highway System.

US 101 is generally a two-lane facility in the rural areas with posted speeds at 55 miles per hour (mph) except for a number of speed zones at junctions and service centers. It has few raised medians on the rural sections of highway. Outside of the North Bend/Coos Bay and Bandon urbanized areas, zoning adjacent to US 101 includes Rural Residential, Rural Industrial, Agricultural, Forest and Rural Service Center, as shown in Figure 1-2.

OR Highway 42 (Coos-Roseburg Highway)

OR 42 is a Statewide Highway which begins at the junction with US 101 approximately five miles south of Coos Bay, and traverses the Coast Range, passing through Coquille and Myrtle Point then continuing into Douglas County where it connects with I-5 south of Roseburg. OR 42 is

part of the freight route that extends from I-5 to the Oregon Coast and also includes part of US 101 and OR 38. This route, along with OR 38, forms a regional transportation system between I-5 and US 101 that serves both personal and freight travel (ODOT, OR 38/42 Corridor Plans, 2001, p.2-1). The OHP classifies OR 42 as an Expressway from the junction with OR 42 (MP 0) to West Central Street in Coquille (MP 9.97) and then again from Filter Plant Road in Coquille (MP 13.19) to Ash Street in Myrtle Point (MP 20.53). OR 42 is also part of the National Highway System and is a federally designated truck route from US 101 (MP 0) to the junction with OR 42S (MP 14).

OR 42 varies from two to four lanes from its junction with US 101 through the cities of Coquille and Myrtle Point. East of Myrtle Point, it is primarily two lanes. Outside the cities of Myrtle Point and Coquille, OR 42 runs through agricultural, rural residential, and forest lands.

OR Highway 42S (Coquille-Bandon Highway)

OR 42S is a District Highway which begins at the junction with US 101 in Bandon and extends eastward to the junction with OR 42 south of Coquille.

OR 42S is a two-lane facility with a posted speed of 55 mph in the rural areas and 45 mph approaching Bandon where it joins with US 101. Between Coquille and Bandon, OR 42S runs through agricultural, rural residential, and forest lands.

OR Highway 241 (Coos River Highway)

OR 241 is classified as a District Highway in the OHP with the exception of a short section at its junction with US 101 in the Bunker Hill area in Coos Bay, which is classified as a Statewide Highway. A portion of the highway from US 101 to Mullen Road is designated as part of the National Highway System as it provides intermodal access to the Bunker Hill Industrial Area. From Bunker Hill, OR 241 runs through the eastside section of Coos Bay, and continues to the community of Allegany. A 1.51-mile section of OR 241 is under Coos Bay jurisdiction.

OR 241 is a two-lane facility with a posted speed of 55 mph beyond the Coos Bay city limits. East of Coos Bay, OR 241 runs through agricultural and forest lands.

OR Highway 540 (Cape Arago Highway)

OR 540 runs from downtown North Bend through Coos Bay then south through the community of Charleston to Cape Arago State Park. It is classified as a District Highway in the OHP and is designated as a scenic byway from Shore Edge Drive (milepost 8.74) to the state park. A 2.25-mile section of OR 540 is under Coos Bay jurisdiction.

OR 540 is a four-lane facility within North Bend and Coos Bay but outside the city limits, it is a two-lane facility. Posted speed is 40 mph from Coos Bay to the community of Charleston, where the posted speed drops to 35 mph. South of Charleston, the posted speed is 45 mph until the state park, where the posted speed varies from 25 to 35 mph. The adjacent lands are primarily zoned rural service center and park.

State Highway 542 (Powers Highway)

OR 542 connects OR 42 south of Myrtle Point to Powers. It is classified as a District Highway in the OHP with no other special designations.

OR 542 is a two-lane facility with no medians or turn lanes and a posted speed of 55 mph except within the city of Powers. Outside the city limits, OR 542 travels through primarily lands zoned for agricultural uses.

Pavement Conditions

The ODOT Pavement Services Unit surveyed pavement conditions on the highway system in 2008. The five pavement condition categories used include: Very Good, Good, Fair, Poor, and Very Poor². With the exception of structures, the state highway surfaces in Coos County are asphalt concrete pavement. The rating definitions for asphalt concrete are summarized below:

- **Very Good** – Stable, no creaking, no patching, and no deformation. Excellent riding qualities. Nothing would improve the roadway at this time
- **Good** – Stable, minor cracking, generally hairline and hard to detect. Minor patching and possibly some minor deformation evident. May have dry or light colored appearance. Very good riding qualities. Rutting may be present but is less than ½ inch.
- **Fair** – Generally stable, minor areas of structural weakness evident. Cracking is easier to detect, patched but not excessively. Deformation more pronounced and easily noticed. Ride qualities are good to acceptable. Rutting may be present but is less than ¾ inch.
- **Poor** – Areas of instability marked evidence of structural deficiency, large crack patterns (alligatoring), heavy and numerous patches, deformation very noticeable. Riding qualities range from acceptable to poor. When rutting is present, rut depth is greater than ¾ inch.
- **Very Poor** – Pavement in extremely deteriorated condition. Numerous areas of instability. Majority of section showing structural deficiency. Ride quality is unacceptable (probably should slow down).

Table 3-7 summarizes the pavement conditions by roadway section for the portions of the state highways in Coos County which lie outside city limits.

Excluding structures and sections currently under construction, approximately 65 percent of the state highways that lie within Coos County and outside city limits are rated as having pavement that is in Good or Very Good condition. Another 25 percent is rated as Fair. The remaining 10 percent is rated as Poor with no sections rated at Very Poor.

² Definitions of the pavement condition categories can be found in the ODOT, Pavement Services Unit, 2008 Pavement Condition Report, Appendix E which can be found at the following internet address:

http://www.oregon.gov/ODOT/HWY/CONSTRUCTION/docs/pavement/2008_pavement_condition_report_maps.pdf

Table 3-7. Pavement Conditions Inventory – State Highways

Route	Section Name	Begin Milepost	End Milepost	Length	Rating 2008
US 101	Douglas County Line - Tugman State Park	220.58	221.26	0.68	Good
US 101	Tugman State Park – Spinreel Road	221.26	224.40	3.14	Fair
US 101	Spinreel Road - McCullough Bridge	224.40	233.48	9.08	Very Good
US 101	McCullough Bridge (North Bend City Limits)	233.48	234.03	0.55	Structure
US 101	Coos Bay South City Limits - Lorain Avenue	239.22	240.42	1.20	Under Construction
US 101	Lorain Avenue - Davis Slough	240.42	244.82	4.40	Good-Very Good
US 101	Davis Slough - Bullards Bridge	244.82	259.58	14.76	Fair
US 101	Bullards Bridge	259.58	259.72	0.14	Structure
US 101	Bullards Bridge - Bandon North City Limits	259.72	261.20	1.48	Good
US 101	Bandon South City Limits - Two Mile Road	277.84	278.30	0.46	Good
US 101	Two Mile Road - Laurel Grove	278.30	280.62	2.32	Poor
US 101	Laurel Grove – Bethel Creek	280.62	284.80	4.18	Good
US 101	Bethel Creek - Butte Creek	284.80	285.50	0.70	Poor
US 101	Butte Creek – Curry County Line	285.50	285.78	0.28	Fair
OR 42	Junction US 101 - Delmar Lane (EB)	0.00	2.70	2.70	Very Good
OR 42	Delmar Lane - Overland Lane	2.70	3.98	1.28	Good
OR 42	Overland Lane - Coquille City Limits	3.98	9.68	5.70	Very Good
OR 42	Coquille City Limits – Glen Aiken Creek	12.80	15.20	2.40	Good
OR 42	Glen Aiken Creek - N. Fork Coquille River	15.20	19.34	4.14	Very Good
OR 42	N. Fork Coquille River Bridge	19.34	19.61	0.27	Structure
OR 42	N. Fork Coquille River - Myrtle Point City Limits	19.61	20.01	0.40	Very Good
OR 42	Myrtle Point City Limits – Junction OR 542	21.83	23.65	1.82	Very Good
OR 42	Junction OR 542 - Douglas County Line	23.65	44.95	21.30	Good
OR 42S	Bandon East City Limits - Bear Creek Rd	0.18	3.10	2.92	Good
OR 42S	Bear Creek Rd – Junction OR 42	3.10	16.94	13.84	Fair
OR 241	Junction US 101 - 16th Ave	0.00	0.72	0.72	Poor
OR 241	Begin State Jurisdiction - Catching Slough	2.19	2.30	0.11	Structure
OR 241	Catching Slough - Chandler Bridge	2.30	3.62	1.32	Fair
OR 241	Chandler Bridge	3.62	3.80	0.18	Structure
OR 241	Chandler Bridge - Boat Kruse Rd	3.80	15.05	11.25	Good
OR 241	Kruse Rd - End of Pavement	15.05	18.95	3.90	Poor
OR 540	Begin State Jurisdiction - Sunset Bay State Park	4.49	10.94	6.45	Poor
OR 540	Sunset Bay State Park - Cape Arago	10.94	14.15	3.21	Very Good
OR 542	Junction OR 42 – Milepost 8 Slide Section	0.00	8.00	8.00	Good
OR 542	Milepost 8 Slide Section	8.00	8.65	0.65	Poor
OR 542	Milepost 8 Slide Section - Coq Myrtle Gr. S.P.	8.65	10.17	1.52	Fair
OR 542	Coq Myrtle Gr. S.P. - S. Fork Coquille River	10.17	17.00	6.83	Good
OR 542	Powers Bridge - Powers City Limits	17.10	17.52	0.42	Under Construction

Source: ODOT, Pavement Services Unit, 2008 Pavement Condition Report

Four of the six highways had sections with Poor pavement conditions. US 101 has two sections totaling approximately 3 miles at the southern end of the county with Poor ratings. OR 241 has two sections with Poor rating: one 0.7-mile section located just east of the Coos Bay city limits in the Bunker Hill area and the other section of almost 4 miles at the end of the highway, before it becomes gravel. OR 540 has Poor pavement conditions for a 6.5 mile section from where state jurisdiction begins just south of the Coos Bay city limits to Sunset Bay State Park. Lastly, a slide section of OR 542 near milepost 8 is rated as Poor.

Neither OR 42 nor OR 42S have any sections with Poor ratings.

Bridges

The 2008 bridge inventory data for Coos County was obtained from ODOT's Bridge Maintenance Section and reviewed. Two mutually exclusive elements are used to rate bridge conditions: structural deficiency and functional obsolescence. Structural deficiency is determined based on the condition rating for the deck, superstructure, substructure, or culvert and retaining walls. It may also be based on the appraisal rating of the structural condition or waterway adequacy. Functional obsolescence is determined based on the appraisal rating for the bridge deck geometry, underclearances, and approach roadway alignment. It may also be based on the appraisal rating of the structural condition or waterway adequacy.

The third element used to evaluate bridge conditions is the sufficiency rating, which is a complex formula that takes into account four separate factors to obtain a numeric value rating the ability of a bridge to service demand. The result of this method is a percentage in which 100 percent would represent an entirely sufficient bridge and zero percent would represent an entirely insufficient or deficient bridge. Those bridges with a sufficiency rating of 80 or less are eligible for rehabilitation. Those bridges with a sufficiency of 50 or less are eligible for replacement. Bridges lose their eligibility status for a period of ten years after a (Highway Bridge Program) project is completed.

Figure 3-2 illustrates the location of all bridges in the National Bridge Inventory (NBI) and whether they are identified as structurally deficient or functionally obsolete.

County Bridges

Coos County owns 111 bridges in the NBI system. Of the 111 bridges in Coos County, seven are identified as functionally obsolete and three are identified as structurally deficient, as listed in Table 3-8 (please refer to the first paragraph of this **Bridges** section for definitions of "structurally deficient" and "functionally obsolete"). None of the county bridges have posted weight restrictions.

In addition to those bridges identified with deficiencies, 41 others are identified as not deficient but have sufficiency ratings that indicate they are eligible for replacement (3 bridges) or rehabilitation (38 bridges).

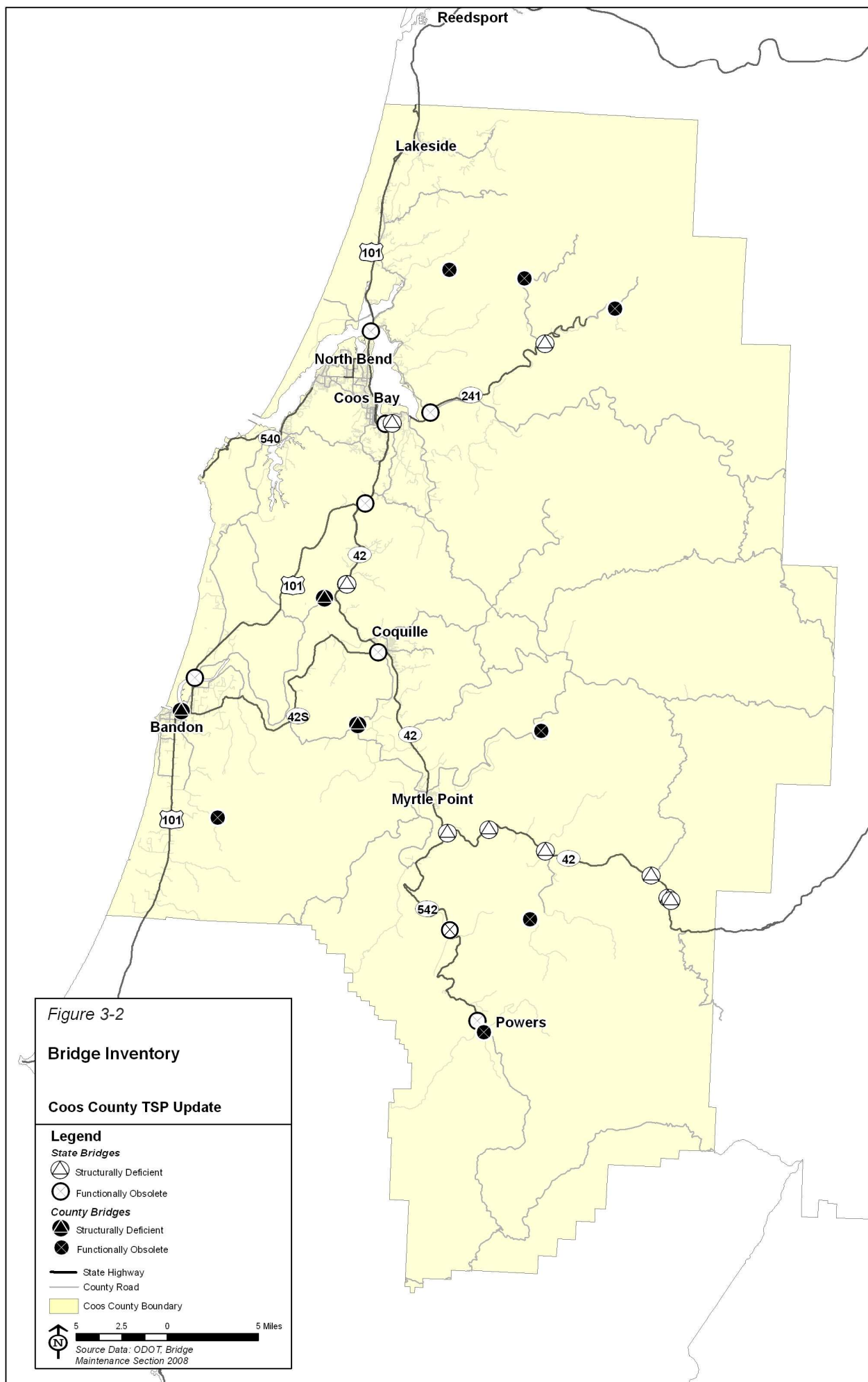


Table 3-8. Functionally Obsolete and Structurally Deficient County Bridges

Bridge ID	Milepoint	Name
FUNCTIONALLY OBSOLETE BRIDGES		
11C13A	3.90	Two Mile Creek, County Rd 11G (Two Mile Lane)
11C43A	5.75	Myrtle Point, County Rd 32 (Myrtle Point Road)
11C87U	0.05	East Fork Coquille River, County Rd 132 (Crosby Road)
11C42D	0.10	Blackmoor/Larson Creek, County Rd 248G (Blackmore)
11C761	0.04	South Fork Coquille River, County Rd 902M
11C20	4.85	West Fork Millicoma, County Rd 47 (West Fork Millicoma Road)
11C171	0.01	Glenn Creek, County Rd 49G (East Fork Road)
STRUCTURALLY DEFICIENT BRIDGES		
08926	0.72	Beaver Creek, County Rd 5A (North Bank Lane)
15409	5.79	Fish Trap Creek, FAS A417 (Robison)
16349	0.00	South Fork Coquille River, County Rd 153G (Gaylord Road)

Source: ODOT, Bridge Maintenance Section

State Bridges

The state owns and maintains 56 bridges located on state highways in both rural and urban Coos County. The bridges are distributed among the six highways within the county as follows:

- 14 bridges located on US 101
- 24 bridges located on OR 42
- 7 bridges located on OR 42S
- 6 bridges located on OR 241
- 2 bridges on OR 540
- 3 bridges on OR 542

Of the 56 state bridges in Coos County, eight are identified as functionally obsolete and nine are identified as structurally deficient, as listed in Table 3-9. Only one structurally deficient bridge has posted weight restrictions: the OR 241 Bridge over Isthmus Slough (#01132F).

In addition to those bridges identified with deficiencies, 16 others are identified as not deficient but have sufficiency ratings that indicate they are eligible for replacement (1 bridge) or rehabilitation (15 bridges).

According to the 2008 Bridge Condition Report, Appendix E³, a \$35 million rehabilitation project funded through the STIP program is underway on the functionally obsolete McCullough Bridge on US 101 (#01823). Appendix F of the report identifies project programmed through 2011:

- US 101: McCullough Bridge (#01823) – deck rehabilitation – STIP funding

³ 2008 Bridge Condition Report, Bridge Engineering Section, Oregon Department of Transportation

- OR 241: Isthmus Slough Bridge (#01132F) – east approach – STIP funding
- OR 42: Sandy Creek Bridge (#00482B) – earmark funding
- OR 42: Middle Fork Coquille River Bridge (#09185) – earmark funding
- OR 42: Middle Fork Coquille River Bridge (#09186) – earmark funding
- OR 42: Beaver Creek to Middle Fork Coquille River Bridge Bundle (#00559B, #03173A, #03212A, #08830, #08842, #08843, #08875, #08876, #08935, #08936) – no funding identified

Table 3-9. Functionally Obsolete and Structurally Deficient State Bridges

Bridge ID	Highway	Milepoint	Name
FUNCTIONALLY OBSOLETE BRIDGES			
01823	US 101	233.99	Coos Bay, US 101 (McCullough)
07020	US 101	259.65	Coquille River, US 101 (Bullards)
08281	OR 42	0.07	OR 42 over US 101 NB
03173B	OR 42	5.37	Beaver Creek, OR 42 WB
00598D	OR 42S	16.74	Coquille River, OR 42S
02390	OR 241	0.14	OR 241 over CORP
07176	OR 241	3.73	Coos River, OR 241 (Chandler)
01942A	OR 542	18.22	S Fork Coquille R, OR 242 at MP 18.22 (Powers)
STRUCTURALLY DEFICIENT BRIDGES			
03173A	OR 42	5.37	Beaver Creek, OR 42 EB
08842	OR 42	23.37	Middle Fork Coquille River, OR 42 at MP 23.37
03212A	OR 42	26.72	Endicot Creek, OR 42
08935	OR 42	30.59	Middle Fork Coquille River, OR 42 at MP 30.59
00482B	OR 42	37.31	Sandy Creek, OR 42
09185	OR 42	40.56	Middle Fork Coquille River, OR 42 at MP 40.56
09186	OR 42	40.77	Middle Fork Coquille River, OR 42 at MP 40.77
01132F	OR 241	0.42	Isthmus Slough, OR 241 (Eastside)
01492A	OR 241	14.07	West Fork Millicoma River, OR 241

Source: ODOT, Bridge Maintenance Section

Traffic Control

The vast majority of intersections in Coos County are STOP-controlled outside of the urban areas. The exceptions on the state highways include the following locations:

- US 101 and Flannagan Road
- US 101 and OR 241 junction
- US 101 and Edwards Road/Ivy Hills Road
- US 101 and East Bay Drive

Bicycle and Pedestrian Facilities

The County-wide bicycle network primarily consists of the Oregon Coast Bike Route (OCBR) and portions of the state highways (see Figure 3-3). ODOT's Bicycle and Pedestrian Program has updated their inventory of facilities on state routes for 2008-09. There is no extensive network of specifically designated bicycle routes serving Coos County other than the OCBR. There is one bike lane within the county maintained network, which is on West Central Boulevard in Coquille. Portions of US 101 and OR 42 in Coos County have existing five-foot wide bike lanes rated in fair condition. Bike shoulders exist along US 101, OR 42, OR 42S, OR 542 and a short segment of OR 241. These shoulder segments vary in width from one to eight feet and are in fair to poor condition. ODOT designates short segments of US 101, OR 540 and OR 542 as shared roadways. A portion of OR 542 maintains a seven-foot wide blacktop shared use path listed in fair condition.

In 1991, a Bikeway Master Plan was completed for Coos County to provide guidance for future bikeway improvements and to enable the County and the seven incorporated cities to be eligible for funding of specific projects and programs. While the Bikeway Master Plan is outdated, the existing bicycle system inventory and deficiencies identified in the Plan remain relevant to current County-wide conditions.

Bike Shoulders

The draft Oregon Bicycle and Pedestrian Plan recommends shoulders for bicycle use that are 6 feet wide, although a minimum 4-foot shoulder may be used when there are physical width limitations. A summary of shoulder widths from the highway inventory database for the six state highways in Coos County is presented in Table 3-10.

On the highways of statewide significance, US 101 and OR 42, approximately 85 percent of the roadways have paved shoulders that are 4 feet or wider, which meets the minimum width recommended in the state plan. Approximately 40 percent of US 101 and 65 percent of OR 42 have shoulders that are 6 feet or wider. The remaining 15 percent of the shoulders that are less than 4 feet must be considered shared roadway.

Of the district highways the Cape Arago Highway, OR 540, has more than 60 percent of the paved shoulders at 4 feet or wider. Less than 10 percent of the other highways have shoulders 4 feet or wider. While the district highways have lower volumes than the statewide highways, the average daily traffic volumes indicate that wider shoulders should be provided.

Most of the paved county roads are between 16 and 25 feet wide which does not allow for paved shoulder, thus any bicycles or pedestrians must share the travel lane with motorized vehicles.

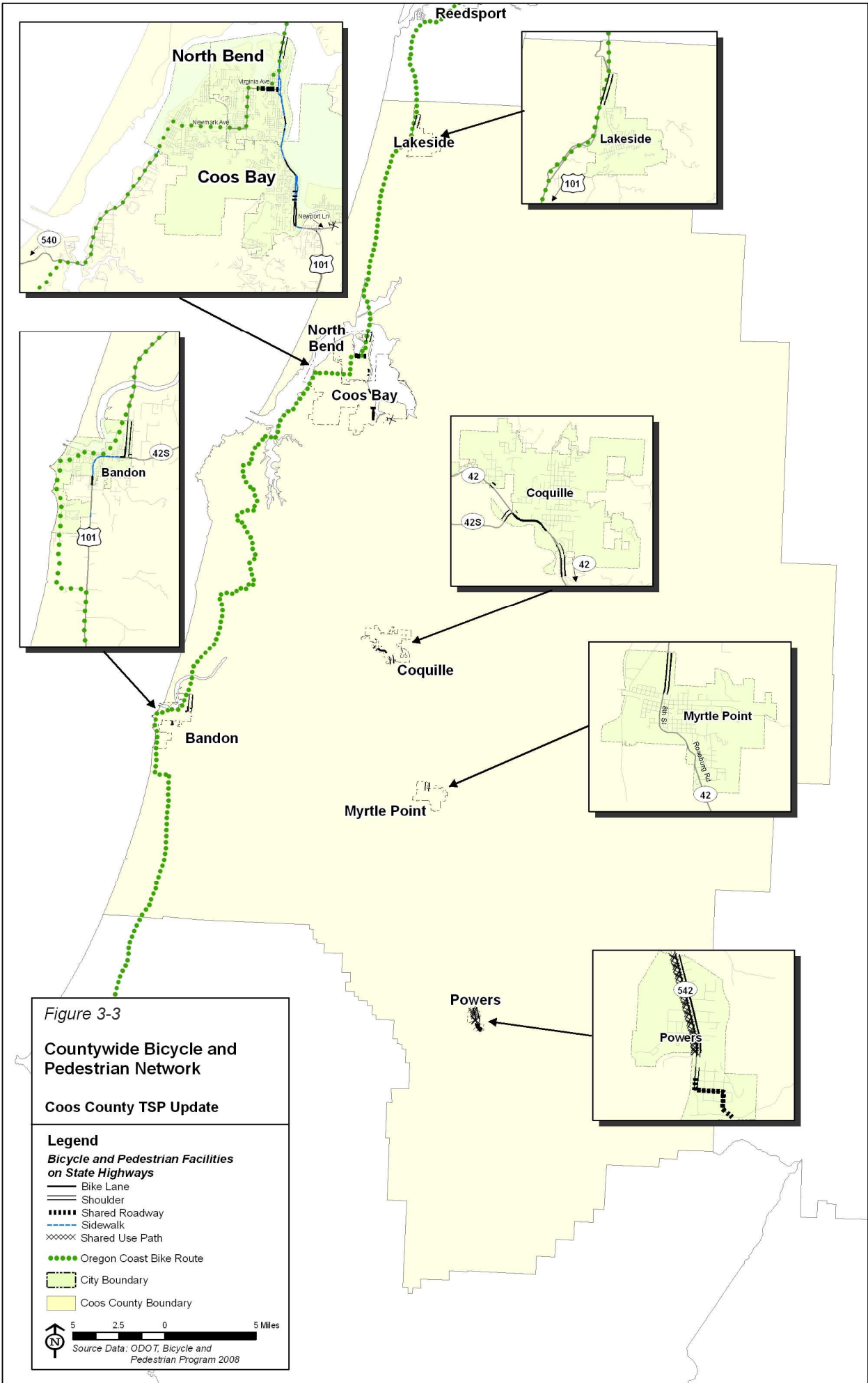


Figure 3-3
Countywide Bicycle and Pedestrian Network
Coos County TSP Update

Legend
Bicycle and Pedestrian Facilities on State Highways
 — Bike Lane
 — Shoulder
 ■■■ Shared Roadway
 - - - Sidewalk
 ×××× Shared Use Path
 ●●● Oregon Coast Bike Route
 [] City Boundary
 [] Coos County Boundary

5 2.5 0 5 Miles
 Source Data: ODOT, Bicycle and Pedestrian Program 2008

Table 3-10. Rural Paved Shoulder Inventory on State Highways in Coos County

Highway	Direction	Miles of Paved Shoulder			
		6 feet or wider	4-5 feet	Under 4 feet	Total
US 101	Northbound	15.08	22.5	5.23	42.81
	Southbound	18.87	16.49	7.45	42.81
OR 42	Eastbound	27.49	6.87	5.94	40.3
	Westbound	25.26	8.49	6.55	40.3
OR 42S	Eastbound	1.15	0.29	15.16	16.6
	Westbound	1.15	0.12	15.33	16.6
OR 241	Northeastbound	0.22	0.97	16.49	17.68
	Southwestbound	0.39	0.28	17.01	17.68
OR 540	Northeastbound	0.54	5.2	3.92	9.66
	Southwestbound	0.83	5.51	3.32	9.66
OR 542	Northbound	0.46	1.06	16	17.52
	Southbound	0.46	1.09	15.97	17.52

Source: ODOT State Highway Inventory Reports

Sidewalks

Sidewalks exist along sections of the state highways within the cities but there are few sidewalks outside city limits with the exception of a few urbanized areas, such as Bunker Hill. Pedestrians in the rural areas are served by whatever shoulders are available, sharing those facilities with bicyclists. As noted above, shoulder segments vary in width from one to eight feet and are in fair to poor condition.

There is one sidewalk within the county maintained network, which is on West Central Boulevard in Coquille.

Public Transit Services

Overall, there are six public transportation operators in Coos County. These operators and their services include:

- Coos County Area Transit Service District (CCAT) – Fixed route and demand responsive services in Coquille, Myrtle Point, Bandon, and Coos Bay/North Bend, with a “Loop Bus” service around Coos Bay/North Bend.
- Taxi and limousine service is available primarily in the Coos Bay/North Bend area in conjunction with clientele traveling between the Southwestern Oregon Regional Airport, located in North Bend, and the Bandon Dunes Golf Resort.
- Region 7 of the Oregon Department of Human Services maintains a volunteer sedan transportation program for non-emergency medical transportation.
- The Powers Stage is a van service sponsored by the Powers Housing Authority which connects Powers to the Bay area on Tuesdays and Fridays.

- Curry Public Transit operates a bus service serving Coos County from Brookings to the Bay area on Monday, Wednesday, and Friday.
- Greyhound operates commercial bus service seven days/week on Highway 101, stopping in Brookings, Coos Bay and Reedsport. Ticket service is provided in Coos Bay.

Air Facilities

Table 3-11 lists the public use airports operating in Coos County and general locations are shown in Figure 3-4. In addition to the four public airports, there are six privately-owned airfields/airstrips and two private helipads operating in Coos County.

Table 3-11. Coos County Airports

Name	Category	Category Definition
Southwest Oregon Regional Airport	1	Commercial Service Airport ¹
Bandon State Airport	4	Community General Aviation Airport ²
Lakeside State Airport	5	Low Activity General Aviation Airports ³
Powers Airport	5	Low Activity General Aviation Airports ³

Notes:

1. Category 1 - Commercial Service Airports - Accommodate scheduled major/national or regional/commuter commercial air carrier service.
2. Category 4 - Community General Aviation Airports - Accommodate general aviation users and local business activities.
3. Category 5 - Low Activity General Aviation Airports - Accommodate limited general aviation use in smaller communities and remote areas of Oregon.

Source: ODOT, 2000

Southwest Oregon Regional Airport

The Southwest Oregon Regional Airport (SWORA), located in North Bend, is operated by the Coos County Airport District, which is governed by a Board of five Commissioners elected county-wide. The airport terminal is approximately 1 mile from US 101. The airport has three asphalt runways, one of which is no longer in use, and two main parallel taxiways.

Commercial air service is currently provided by United Express. Direct connections to Portland, Oregon and San Francisco, California are available. Two outbound flights to each of these cities and two inbound flights from each of these cities are scheduled each day.

SWORA has one fixed base operator providing general aviation services. Coos Aviation operates from a hangar and buildings at the north end of the airport. They provide maintenance space, ground handling equipment, fuel service, as well as on-site amenities for visitors.

The United State Coast Guard runs helicopter operations out of SWORA. They have their own building and apron south of the terminal building.

Air cargo services are also available at SWORA. FedEx operates out of a hanger northwest of the terminal building. Other cargo services are provided by United Express and AmeriFlight, Inc.

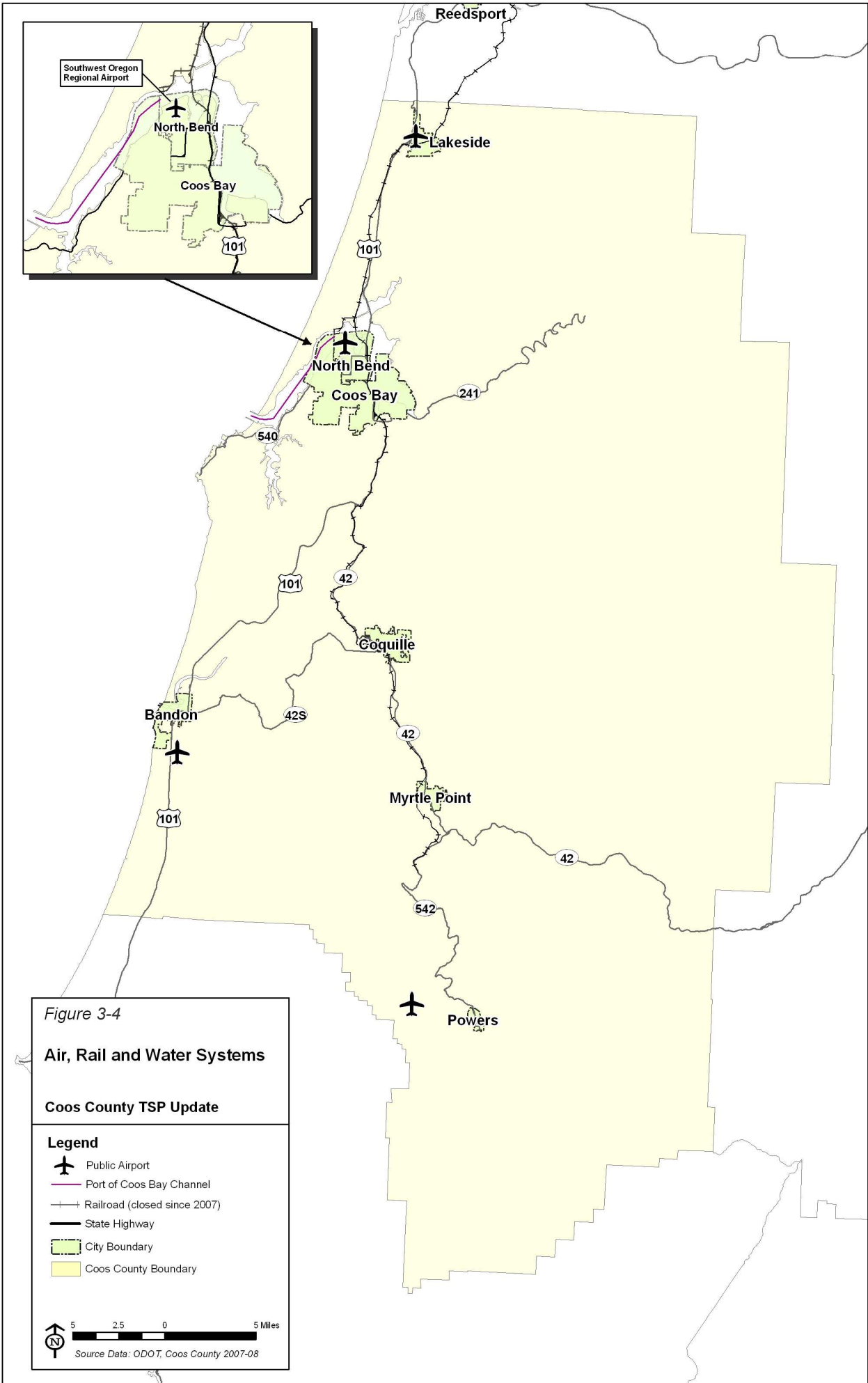


Figure 3-4
Air, Rail and Water Systems
Coos County TSP Update

Legend

- Public Airport
- Port of Coos Bay Channel
- Railroad (closed since 2007)
- State Highway
- City Boundary
- Coos County Boundary

5 2.5 0 5 Miles
 Source Data: ODOT, Coos County 2007-08

According to the 2002 North Bend Municipal Airport Master Plan (note: “North Bend Municipal Airport” is the former name of the SWORA), annual passenger and cargo flights are projected to increase from 39,016 (year 2000) to 58,100 by 2020.

Bandon State Airport

Bandon State Airport is owned and operated by the Oregon Department of Aviation. It is located about two miles southeast of Bandon. The airport is usable from dawn to dusk and is attended from 7 a.m. to 6 p.m. Fuel is available along with major airframe and power plant repair service. The runway is 3,600 by 60 feet, surfaced by asphalt in good condition.

Lakeside State Airport

Lakeside State Airport is owned and operated by the City of Lakeside. It is located northwest of Lakeside. The airport is unattended and no airport services are available. The turf runway 2,150 by 100 feet and is in good condition.

Powers Airport

Powers Airport is owned and operated by the Port of Coquille River, based in Myrtle Point. It is located about 1 mile southwest of Powers. The airport is unattended and no airport services are available. The turf runway 2,500 by 60 feet and is in good condition.

Water Facilities

The Port of Coos Bay is the primary center of maritime commerce for Oregon’s South Coast and is home to Oregon’s largest coastal deep-draft harbor. An average of 2.5 million tons of cargo moves through the Port of Coos Bay each year. Inbound and outbound cargo is moved through Coos Bay’s 15-mile channel, which features six marine terminals, seven deep-draft berths and several barge facilities. The channel is identified in Figure 3-4.

The Port of Bandon, also within Coos County, serves communities (Bandon, Parkersburg, Prosper, and Riverton) along the Lower Coquille River. In recent years, this port has focused on accommodating tourism and recreational sport fishing, although it still supports commercial activities.

The Port of Coquille, positioned on the Coquille River, has historically been used for the shipment of raw timber. Currently the Port is primarily utilized for recreational activities, such as fishing and boating.

Rail Facilities

The rail system plays a critical role in the movement of goods within Coos County. In general, goods arrive at port facilities by rail and are loaded onto ships for export. Imported goods are received by ships and unloaded onto trucks and train cars to be distributed domestically. Currently there are no locations within Coos County served by passenger rail service.

Rail service in southwestern Oregon is dominated by the Central Oregon and Pacific Railroad (CORP), which owns and operates on two lines in the region: the Siskiyou Line and the Coos Bay Branch Line. The Coos Bay Branch Line, which passes through Coos County, is 136 miles long and extends between Eugene and Coquille. A short spur line, completed in 2005 and owned by the Oregon International Port of Coos Bay, diverges from the branch line and parallels Transpacific Parkway on the North Spit. The spur line is approximately four miles long and terminates at the Southport Forest Products mill site.

The Port of Coos Bay acquired most of the Coos Bay Branch Line through a Feeder Line Application action before the U.S. Surface Transportation Board. Financing of the acquisition was supported by a loan package administered by the Oregon Economic Development Department. The Port finalized the acquisition of the 111 miles of the CORP Coos Bay line in March 2009 and in the same month acquired a \$2.5 million grant through the American Recovery and Reinvestment Act (ARRA) of 2009, which was used for rehabilitation on four deficient tunnels. In the fall of 2009, the Port also submitted an application to the Connect Oregon III program for \$7.9 million to continue rehabilitation efforts involving swing-span bridges, other bridges and trestles, rail/ties/ballast, and other rail corridor needs. The Connect Oregon funds were awarded in August 2010 and work began in fall 2010.

The 2009 Oregon Legislature provided \$3.5 million in Oregon Lottery bond funds for the Coos Bay rail line which was provided to the Port in May 2010. A portion of those funds are currently being used to continue tunnel rehabilitation, and some funding will help with culvert rehabilitation. The ODOT Rail Division is working with Port staff on an at-grade roadway/railroad crossing signal upgrade project funded through the Federal Railroad Administration, with some funding coming from the ODOT Rail Division. Port staff also has submitted an application to the federal TIGER II program for funds to upgrade track structure – rail, ties, ballast and roadbed rehabilitation – to increase the operation velocity of the rail line from primarily Class 1 (10 mph) to a mix of Class 2 (25 mph) and Class 3 (40 mph).

Pipelines

Coos County currently has its own natural gas pipeline operated by NW Natural Gas. The pipeline extending from the Coos Bay/North Bend area eastward across the County and through Douglas County to connect with the Williams' Northwest Pipeline, which runs north-south through Oregon extending from the Medford area through Portland and into Washington. A spur from the pipeline extends southward toward the Bandon area.

In addition to the existing pipeline, the Pacific Connector project would construct a 230-mile pipeline from the proposed Jordan Cove liquefied natural gas import terminal located on the north spit in the Port of Coos Bay to the Pacific Gas and Electric Company's gas transmission system, Tuscarora Gas Transmission's system and Gas Transmission Northwest's system, all located near Malin, Oregon, southwest of Klamath Falls. In addition, the project would interconnect to Williams' Northwest Pipeline near Myrtle Creek and Avista Corporation's distribution system near Shady Cove.

4. EXISTING TRANSPORTATION SYSTEM DEFICIENCIES

Chapter 4 contains an analysis of current operating conditions for the transportation system. This evaluation focuses primarily on the street system but does identify gaps in the bicycle and pedestrian system as well. Census data were examined to determine travel mode distributions.

Traffic Volumes

Traffic volume data in Coos County was obtained from a number of ODOT sources and supplemented with turning movement and road tube traffic counts collected in collected in early 2009.

Average Daily Traffic

Average daily traffic (ADT) volumes reflect the annual average of daily traffic volumes on roadways throughout the year. They do not reflect seasonal fluctuations or special events. The ADT represents the typical volume of traffic in all lanes passing a given roadway location in both directions over a 24-hour period.

The ADT volumes for Coos County were developed from ODOT's Traffic Volume Tables, data from ODOT's automated traffic recorders⁴ (ATRs), and 24-hour counts collected on some county roads. All volumes have been estimated for an existing year condition of 2008. At some locations, this involved growing available data from earlier years to 2008 based on general growth rates calculated from five-year trends around Coos County.

Figure 4-1 illustrates ADT volumes at key locations on state highways and major county roads.

County Roads

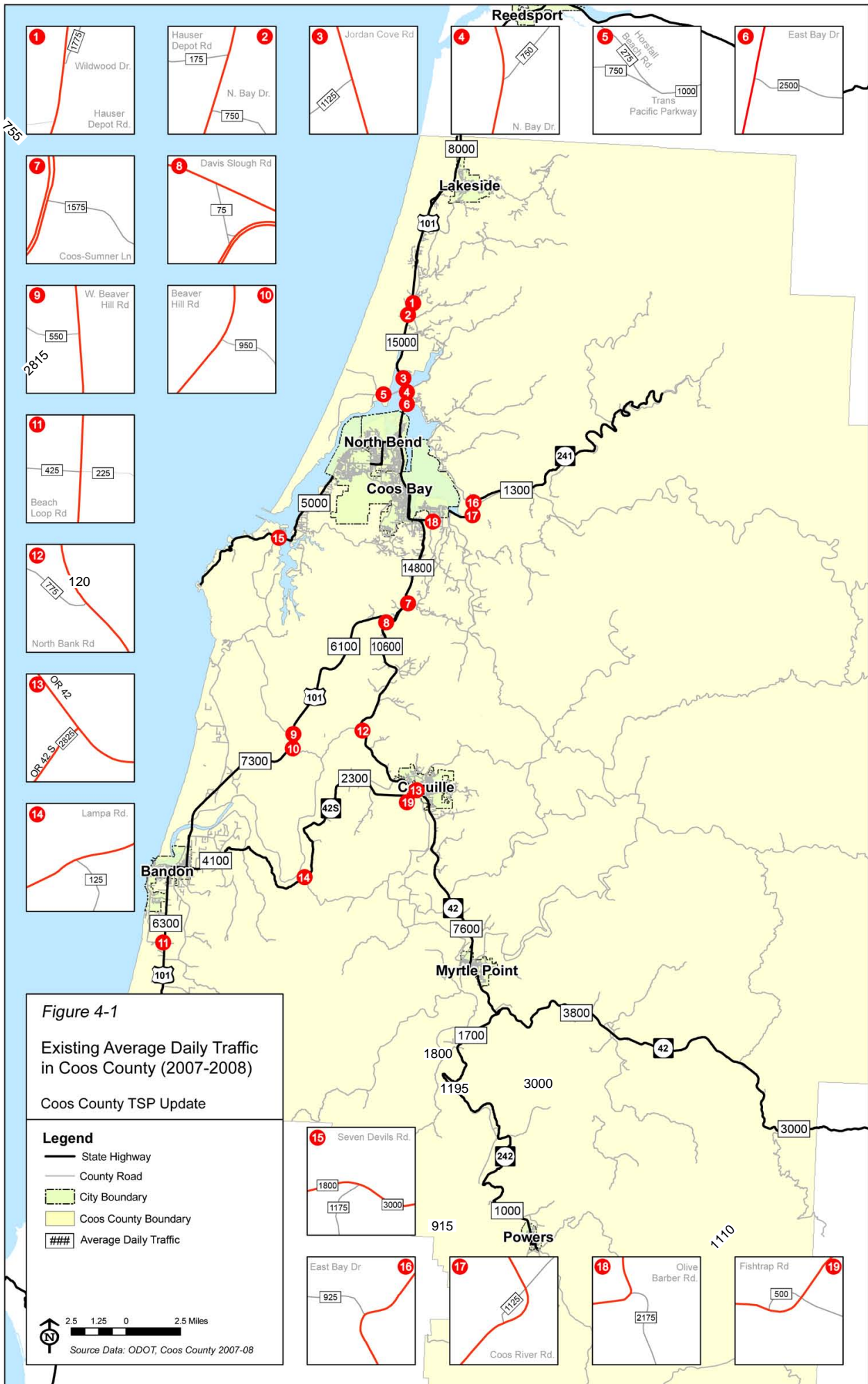
The 2008 ADT volumes on selected roadways in Coos County were estimated from turning movement data collected at various key intersections around the county. These volumes are presented in Figure 4-1.

Some of the most heavily used county roads with ADT volumes between 1,000 and 2,500 vehicles per day include:

- East Bay Drive
- Olive Barber Road
- Wildwood Road
- Coos-Sumner Lane
- Seven Devils Road
- Jordan Cove Road
- North Bay Road
- Coos River Road

The ADT volumes estimated for other roadways around the county were under 1000 vehicles per day.

⁴ Automatic traffic recorders are permanent electronic counting sites located on the state highway system. The recorders count vehicles continuously throughout the year, enabling ODOT to provide information about hourly, monthly, and yearly trends as well as a breakdown of vehicles by type (cars, trucks, buses, motorcycles, etc.).



File: P:\O\ODOT\00000631\0600\INFOG\Sarcmap\TM3\Existing Streets and Counts

State Highways

The 2007 ADT volumes on the state highways in Coos County were taken from the ODOT 2007 Traffic Volume Tables. Traffic volumes are generally highest near the cities and drop off in rural sections.

US 101 (Oregon Coast Highway)

Traffic volumes on the sections of US 101 outside cities vary from a low of 4,600 at the Coos-Curry county line to 26,400 just south of the Coos Bay city limits. Volumes at the north end of US 101 at the Coos-Douglas county line (M.P. 220.58) are estimated at 7,700 ADT. Moving southward along the highway, volumes continue to grow until they are almost double (15,000 ADT) at the North Bend city limits. Volumes just south of the Coos Bay city limits are 26,400 ADT but they drop off considerably in less than half a mile; just south of the OR 241 junction, ADT is 17,500. Volumes drop again dramatically just south of the OR 42 junction with ADT at 6,100. They increase slightly near Bandon (6,300 ADT) but drop to their lowest level (4,600 ADT) at the Coos-Curry county line (M.P. 285.78).

OR 42 (Coos Bay-Roseburg) Highway

Outside city limits, traffic volumes on the sections of OR 42 vary from a high of 10,600 ADT, just east of the junction with US 101, to a low of 3,000 ADT at the Coos-Douglas county line.

OR 42S (Coquille-Bandon Highway)

Traffic volumes on OR 42S are highest just east of Bandon with an ADT of 4,100. They drop off to a low of 1,200 ADT between Bandon and Coquille and then increase as they approach the Coquille city limits with an ADT of 2,300.

OR 241 (Coos River Highway)

Traffic volumes are highest on the section of OR 241 between US 101 and where it enters the Coos Bay city limits with 9,400 ADT. After exiting Coos Bay, the ADT is 4,100 dropping to around 1,000 ADT over the next two miles and continuing to decrease to the end of the roadway.

OR 540 (Cape Arago Highway)

At the south city limits of Coos Bay, the traffic volumes on OR 540 are approximately 9,000 ADT. Going southward, they drop to approximately 5,000 ADT in the community of Charleston and then drop further to 1,100 ADT at the entrance to the state parks.

OR 542 (Powers Highway)

Traffic volumes on OR 542 are highest just south of OR 42 at 1,700 ADT dropping to under 1,000 ADT at the Powers city limits.

Seasonal Fluctuations

The volumes shown in Figure 4-1 are average volumes for the year. Summertime is the season when volumes are highest. Data from the three ATRs in Coos County located on US 101 show that summer volumes vary from 15 to 35 percent higher than ADTs. Monthly fluctuations are smallest near the Coos Bay/North Bend urban area, where the daily travel of the large resident population influences traffic trends, and greatest near the county lines to the north and south, where recreational travel accounts for a much higher percentage of the overall traffic volume.

Design Hourly Volumes

The design hourly volume (DHV) is the hourly volume that is used for long-range planning and design. For any roadway, it represents the 30th highest hourly traffic volume along the roadway segment throughout the year. A review of the ATR data on the state highways in Coos, Douglas, and Lane Counties shows that values for the 30th highest hour range from 10 to 16 percent of the ADT. These data also show that the 30th highest hour as a percentage of ADT fluctuates minimally each year.

Table 4-1. Traffic Volume Characteristics from ATR Sites within and near Coos County

ATR #	Location	2008 ADT	Truck %	Truck Volume	DHV %	DHV
06-001	US 101, 1.09 miles south of the Coos-Douglas County Line (MP 221.67)	8,000	8.2	655	12.4	990
06-004	US 101, 1.02 miles south of SW 18 th St. (MP 275.87)	6,350	8.5	540	11.9	755
06-009	US 101, 0.28 miles north of Coos Bay-Roseburg Highway (MP 243.99)	14,750	8.6	1,270	10.4	1,535
10-003	OR 38, 7.08 miles east of Scottsburg West Road (MP 23.65)	3,500	24.2	850	15.6	545
10-006	OR 42, 1.22 miles west of Brockway Road (MP 70.51)	6,000	16.0	960	10.0	600
20-005	OR 126, 3.06 miles west of Territorial Highway – OR 200 (MP 43.86)	6,400	10.6	680	12.3	790

Source: 2008 Transportation Volume Tables, ODOT Transportation Data Section

Hourly traffic counts in Coos County were collected at different times during the year, but all of the counts have been adjusted to estimate DHVs. The DHVs were calculated by multiplying the peak hour volumes by a seasonal factor. The seasonal factors used in the calculations were determined using five years of data from the ATRs listed above and from other seasonal trend information available from ODOT. The DHVs are presented under the traffic operations section of the report in the analysis of two-lane highways (see Table 4-3).

Traffic Operations

Traffic operations were analyzed for selected roadway segments and intersections throughout Coos County. Operations were evaluated according to the methodologies in the 2000 Highway Capacity Manual (HCM)⁵.

Operational Criteria

Transportation engineers have established various standards for measuring traffic operations of roadways and intersections. Each standard is associated with a particular level of service (LOS) and/or the volume-to-capacity (v/c) ratio. Both the LOS and v/c ratio concepts require consideration of factors that include traffic demand, capacity of the intersection or roadway, delay, frequency of interruptions in traffic flow, relative freedom for traffic maneuvers, driving comfort, convenience, and operating cost.

Volume-to-Capacity (V/C) Ratio

Transportation engineers have established various standards for measuring traffic capacity and quality of service of roadways at intersections. A comparison of traffic volume demand to intersection capacity is one method of evaluating how well an intersection is operating. This comparison is presented as a v/c ratio. A v/c ratio of less than 1.00 indicates that the volume is less than capacity. When it is closer to 0.00, traffic conditions are generally good with little congestion and low delays for most intersection movements. As the v/c ratio approaches 1.00, traffic becomes more congested and unstable with longer delays.

The OHP⁶ has established several policies that enforce general objectives and approaches for maintaining highway mobility. Of these policies, the Highway Mobility Standards (Policy 1F) establish maximum v/c ratio standards for peak hour operating conditions for all highways in Oregon based the location and classification of the highway segment being examined. The OHP policy also specifies that the v/c standards be maintained for ODOT facilities through a 20-year horizon.

The operational standards applicable to the state highways in Coos County are found in the Oregon Highway Plan. Standards for unincorporated communities and rural areas, found in the most recent version of the Oregon Highway Plan, are summarized in Table 4-2. The appropriate standards for roadways intersecting state highways are also presented in the table. For segments of state highways within the UGB, standards are dependent on additional variables, such as speed limits, and should be determined by reviewing the most recent version of the OHP.

⁵ Highway Capacity Manual, Transportation Research Board, Washington DC, 2000.

⁶ Table 6: Maximum volume to capacity ratios for peak hour operating conditions, 1999 Oregon Highway Plan, Oregon Department of Transportation, Salem, OR, 1999.

Table 4-2. State Highways Operational Standards

Number	Name	State Classification	State Freight Route	Highway V/C Ratio		Intersecting Roadway V/C Ratio
				Unincorporated Communities	Rural	
US 101	Oregon Coast Highway	Statewide	Yes	0.70 ¹ /0.75	0.70	0.80
OR 42	Coos Bay-Roseburg Highway	Statewide	Yes	0.70 ² /0.75	0.70	0.80
OR 42S	Coquille-Bandon Highway	District	No	0.80	0.75	0.80
OR 241	Coos River Highway	District	No	0.75 ³ /0.80	0.75	0.80
OR 540	Cape Arago Highway	District	No	0.80	0.75	0.80
OR 542	Powers Highway	District	No	0.80	0.75	0.80

Notes:

1. US 101 is a freight route from the Coos-Douglas County Line at milepost 220.58 to the junction with OR 42 at milepost 244.27 and US 101 is an expressway north of OR 42 to S. city limits of Coos Bay. The lower v/c ratio applies to the portion of US 101 that is either an expressway or a designated freight route.
2. OR 42 is an expressway from W. of Myrtle Point to Coquille & W. of Coquille to US 101. The lower v/c ratio applies to the portion of US 101 that is an expressway.
3. OR 241 is a statewide highway at the junction with US 101 and is part of the National Highway System from US 101 at to the Bunker Hill Industrial Area access on Mullen Road. The lower v/c ratio applies to the portion of US 101 that has a statewide classification.

Source: 1999 Oregon Highway Plan, July 2006, Table 6.

The County employs v/c ratio as its primary method for measuring performance, with the LOS criteria serving as a secondary measurement. A maximum v/c ratio of 0.85 should be maintained for all County-maintained intersections during a typical weekday peak hour⁷.

Level of Service

Although the OHP Highway Mobility Standards are the overriding operations standard for Oregon highways, level of service (LOS) is a widely recognized and accepted measure and descriptor of traffic operations and is therefore also presented. At both stop-controlled and signalized intersections, LOS is a function of control delay, which includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Six standards have been established ranging from LOS A where there is little or no delay, to LOS F, where there is delay of more than 50 seconds at unsignalized intersections, or more than 80 seconds at signalized intersections.

It should be noted that, although delays can sometimes be long for some movements at a STOP-controlled intersection, the v/c ratio may indicate that there is adequate capacity to process the demand for that movement. Similarly at signalized intersections, some movements, particularly side street approaches or left turns onto side streets, may experience longer delays because they receive only a small portion of the green time during a signal cycle but their v/c ratio may be relatively low. For these reasons it is important to examine both v/c ratio and LOS when evaluating overall intersection operations. Both are reported below.

⁷ The County operational standards were developed as part of this TSP update.

Roadway Segment Operations

Two-lane highway operations were evaluated for selected roadway segments on the state highway system.

Methodology

Two-lane highway operations were determined using procedures outlined in the HCM. Analysis of rural two-lane highway sections takes into account several variables including the magnitude, type, and directional distribution of traffic as well as roadway features such as the percentage of no-passing zones, general terrain, and lane and shoulder widths. Each of these variables affects the capacity of the rural highway. The capacity of a two-lane highway is generally assumed to be 1,700 passenger cars per hour (pcph) per direction of travel, with a maximum of 3,200 passenger cars per hour per direction of travel for both directions combined.

Although roadway capacity is largely fixed by roadway features, it does vary based on the composition of traffic. The presence of large trucks increases the passenger car equivalent values due to their size and performance characteristics, especially along upgrades. Therefore, the passenger car equivalent values presented in Table 4-2 are unique to the geometric and prevailing traffic conditions in 2008. Future calculation of v/c ratios should include recalculation of passenger car equivalent values to account for potential changes in roadway features or traffic composition.

Two-lane highway operations were analyzed for eleven rural segments in Coos County under estimated two-way design hour volumes. The two-lane highway design speed was assumed to be 60 mph. The remaining variables differed by location for each rural highway segment. Since all rural segments have multiple ADT volumes reported, a worst case analysis was performed using the highest reported volume for each segment.

Two-lane highways are categorized into two classes for analysis. Class I highways are two-lane highways on which travelers expect to travel at relatively high speeds, while Class II highways are two-lane highways on which motorists accept lower travel speeds (i.e. recreational routes, access routes to Class I highways, or rugged terrain routes). The LOS for Class I highways is defined in terms of both percent time-spent-following and average speed. On Class II highways the LOS is defined only in terms of percent time-spent-following. The average percentage of travel time that vehicles must travel in platoons behind slower vehicles due to the inability to pass is the definition of percent time-spent-following.

Results

The resulting v/c ratio and LOS for each two-lane highway segment are shown in Table 4-3. All two-lane highway segments currently operate well within v/c ratio standards outlined in the 1999 OHP and most operate under generally good conditions at LOS C or better. The only exception is the section of US 101 north of the North Bend City limits, where traffic volumes are the greatest of any rural segment of highway.

Table 4-3. Summary of Two-Lane Highway Operations – Existing Condition (2008)

Location		Design Hour Volume (vph)	Passenger Car Equivalent Volume ¹ (vph)	Two-way Capacity (pcph)	V/C Ratio ²	Percent Time Spent Following	LOS ³
US 101	At ATR 06-001: South of County Line	990	1,110	3,200	0.35	63.2	C
	North Bend city limits	1,785	1,990	3,200	0.64	83.2	D
	At ATR 06-004: South of Bandon	755	850	3,200	0.31	53.3	C
	0.10 mile south of Seven Devils Road	870	930	3,200	0.33	58.3	C
	At the Coos-Curry County Line	545	645	3,200	0.25	45.9	B
OR 42	North/West of Powers Highway Junction	530	650	3,200	0.20	41.8	B
OR 42S	East of US 101	490	525	3,200	0.18	39.0	B
	West of Coquille	275	310	3,200	0.11	25.2	A
OR 241	East of Coos Bay	155	165	3,200	0.06	16.1	A
OR 540	East of Charleston	595	620	3,200	0.20	44.9	B
OR 542	South of OR 42	200	225	3,200	0.07	19.7	A

Notes:

1. The passenger-car equivalent volumes are adjusted for peak hour factor, for grade, and heavy vehicles.
2. The volume used to compute v/c ratio is the calculated passenger-car equivalent flow rate in vehicles per hour (vph) as described in Chapter 20 of the 2000 Highway Capacity Manual.
3. LOS is defined in terms of both % time-spent-following and average travel speed for Class I two-lane highways and percent time-spent-following for Class II two-lane highways.

Source: David Evans and Associates, Inc.

Intersection Operations

Twenty-one (21) intersections located throughout Coos County were analyzed to determine existing intersection operations.

Methodology

Traffic operations at selected intersections within Coos County were evaluated using procedures outlined in the *2000 Highway Capacity Manual* for signalized and unsignalized intersections. The design hour volumes were developed from multiplying the peak hour volumes by the appropriate seasonal factor.

Results

The results of the intersection analysis are shown in Table 4-4.

As shown in Table 4-4, all of the 21 analyzed intersections operate well within ODOT's mobility standards outlined in the 1999 OHP under design (30th highest) hour conditions. The critical movement represents the non-free flowing movement with the highest v/c ratio. The majority of the intersections operate under generally free flowing conditions at LOS A or B, with LOS C, D, and E only occurring within city limits. This indicates that all other lower-volume intersections or driveways accessing any rural or urban portion of the highways are operating at LOS A or B as well.

Table 4-4. Summary of Intersection Operations – Existing Condition (2008)

Intersection	Critical Movement ¹	V/C Ratio ²	LOS ²
US 101 at Wildwood Road	Westbound left, right	0.39	C
Hauser Depot Road	Westbound left, through, right	0.18	D
North Bay Road (Hauser)	Westbound left, through, right	0.08	C
Jordan Cove Road	Eastbound left, right	0.25	C
North Bay Road (South)	Westbound left, right	0.32	D
East Bay Drive (signalized)	Overall	0.66	A
Coos-Sumner Lane	Westbound left, right	0.13	C
Davis Slough Road	Northbound left, right	0.04	B
West Beaver Hill Road	Northbound left	0.05	B
Beaver Hill Road	Westbound left, right	0.13	C
Beach Loop Road	Eastbound left, through, right	0.10	B
OR 42 at Davis Slough Road	Southbound left, right	0.01	B
North Bank Road	Eastbound left, right	0.09	B
Fishtrap Road	Southbound left, right	0.04	A
OR 42S	Eastbound left, right	0.21	B
OR 42S at Lampa Lane	Northbound left, right	0.01	A
OR 241 at Olive Barber Road	Westbound left, right	0.39	E
Coos River Road	Northbound left	0.06	A
East Bay Road	Northbound left	0.05	A
OR 540 at Seven Devils Road	Northbound left, through, right	0.08	A
Trans-Pacific Highway and Horsefall Road	Southbound left, right	0.02	A

Notes:

1. The critical movement for unsignalized intersections is the intersection movement with the worst v/c ratio; generally this movement is on the minor approach. At signalized intersections, the critical movement actually reflects the overall intersection operations rather than any single movement.
2. The v/c ratio and LOS are calculated following the methodologies in Chapters 16 and 17 of the 2000 Highway Capacity Manual.

Source: David Evans and Associates, Inc.

Crash History

Crash data from the most recent five-year period available (January 1, 2003 to December 31, 2007) was evaluated for county portions of state highways and for county major and minor collector roads. The purpose of reviewing crash histories is to identify high crash locations, potential crash patterns, and any potential safety concerns at these locations.

During the five-year analysis period, there were a 1,330 crashes reported in Coos County outside of city limits. Of these crashes, 37 were fatal collisions. The majority of reported crashes involved a fixed object (43%), rear-end (19%), or turning (12%) collisions.

County Roadways

Crash data from the most recent five-year period available (January 1, 2003 to December 31, 2007) was evaluated for county major and minor collector roadways but excludes local roads.

The evaluation identifies high crash locations, potential crash patterns, and any potential safety concerns at these locations. During the evaluated period, there were 272 crashes reported in Coos County. Of these crashes along county roadways, 15 resulted were fatal collisions. The majority of reported crashes involved a fixed object (54%) collision. Figure 4-2 illustrates the distribution of crashes along county roadways by collision type. County roadways which experienced a high frequency (ten or more crashes during the study period) of crashes or one or more fatal collisions are shown in Table 4-5.

Table 4-5. Crash History for County Roadways (2003-2007)

Road #	Name	Jurisdiction	Fatal Crashes	Total Crashes	Average Crashes Per Year
184	Libby Lane	County	3	40	8
45	East Bay Road	County	0	26	5
9	Fairview Road	County	0	24	5
33	Seven Devils Road	County	1	21	4
208	Beaver Hill Road.	County	2	13	3
7A	North Bay Road	County	0	12	2
5	North Bank Lane	County	1	11	2
144	Olive Barber Road	County	0	11	2
59	Fairview Sumner Lane	County	0	10	2
1	Sitkum Lane	County	1	9	2
4	Lampa Lane	County	1	4	1
90	South Powers Road	County	1	4	1
186	North Lake Lane	County	1	3	1
13	McKinley Lane	County	1	2	0
29	Beach Loop Road.	County	1	1	0
281	Private Roadways	Private	2	9	2
Total			15	272	54

Source: ODOT Crash Analysis Reporting System

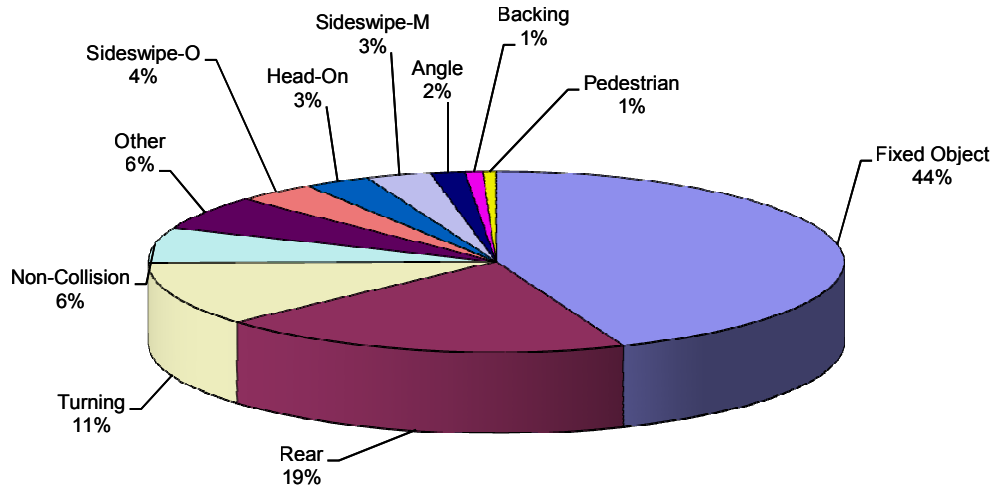
Most of the roadways listed in Table 4-5 have narrow paved surfaces with little to no paved shoulder. Many also have sharp horizontal curves. The most common collision type was fixed-object involving a single vehicle running off the road. Most of the fatal crashes were also fixed-object collisions but there were a few multi-vehicle fatal crashes from head-on angle collisions. The county roads with the greatest number of collisions are discussed below.

Libby Lane

There were 40 reported crashes along Libby Lane during the five-year study period. The most frequent collision type was fixed-object, which accounted for 22 of the total crashes (more than half). Eighteen of the reported crashes occurred in a horizontal curve. There were 3 fatal crashes, which all occurred in different segments and involved separate collision types (head-on, fixed-object, and angle). Crashes were relatively distributed throughout this roadway.

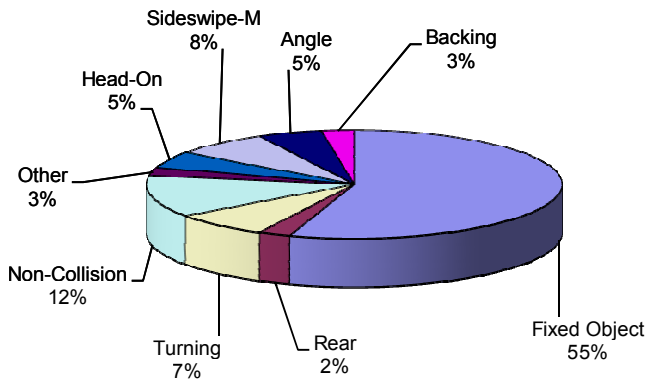
Crashes by Collision Type: Coos County Roadways

(272 total crashes)



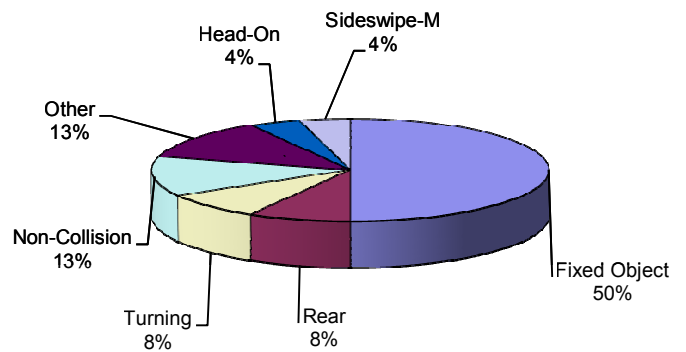
Libby Lane

(40 total crashes)



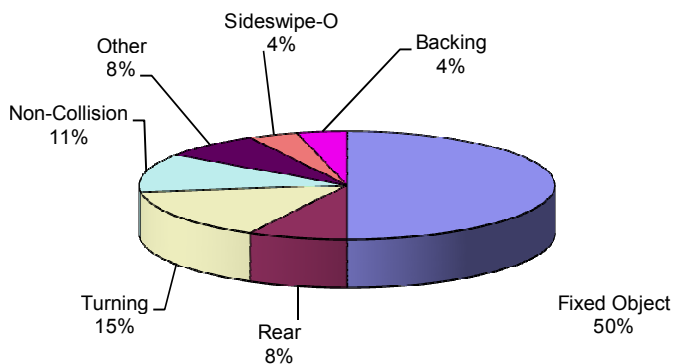
Fairview Road

(24 total crashes)



East Bay Road

(26 total crashes)



Seven Devils Road

(21 total crashes)

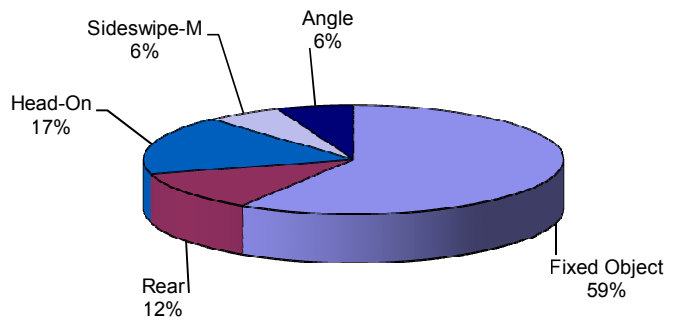


Figure 4-2

**Crashes by Collision Type: County Roadways
(2003-2007 Reported Crashes)**

Coos County TSP Update

Fairview Road

Twenty-four crashes occurred on Fairview Road during the five-year analysis period. The most frequent collision type was fixed-object, which accounted for 12 of the total crashes (half of the total). There were no fatal crashes that occurred on this roadway. Nine of the reported crashes occurred in a horizontal curve. Clusters of crashes occurred at milepost 1.0 (3), between milepost 5.0 and 6.0 (6), and between milepost 8.6 and 8.9 (3), but crashes were otherwise distributed throughout this corridor which has sharp horizontal curves throughout.

East Bay Road

Of the 26 reported crashes along East Bay Road during the five-year study period, the most frequent collision types were fixed-object (13) and turning (4) related. There were no fatal crashes that occurred on this roadway. East Bay Road has little to no shoulders and sharp horizontal curves throughout the corridor. Clusters of crashes occurred near milepost 1.0 (one mile southeast of US 101 connection), and between milepost 5.0 and 6.0 (2 miles northwest of OR 241).

Seven Devils Road

Of the 21 reported crashes along Seven Devils Road during the five-year study period, the most frequent (13) collision type was fixed-object related. There were also 4 head-on collisions, 2 of which occurred at milepost 2.5. There was 1 fatal crash along this roadway, which involved a head-on collision. Crashes were relatively distributed throughout the corridor, which has sharp horizontal curves throughout.

State Highways

In addition to the five-year review of crash data, ODOT's Crash Summary Database also calculates three useful factors for comparison with statewide statistics: average crash rates by segment, the Safety Priority Index System (SPIS) value, and Safety Investment Program (SIP) rating. After the overview of these statewide statistics, there is a safety evaluation which discusses each state corridor.

Crash Data

Crash data from the most recent five-year period available (January 1, 2003 to December 31, 2007) was evaluated for State roadways to identify high crash locations, potential crash patterns, and any potential safety concerns at these locations. During the evaluated period, there were a total of 1058 crashes reported on state highways in Coos County. Of these crashes along state highways, 22 resulted in a fatality(s). The majority of reported crashes involved a fixed object (42%), rear-end (22%), or turning (13%) related collision. Figure 4-3 illustrates the distribution of crashes along state highways by collision type. Each state highway experienced at least one fatal crash during the analysis period. Table 4-6 itemizes the observed crashes by highway. In addition, Figure 4-4 illustrates identified safety locations along state and county facilities.

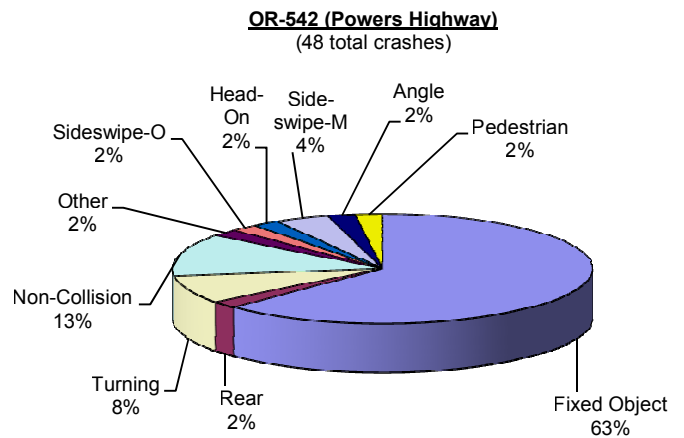
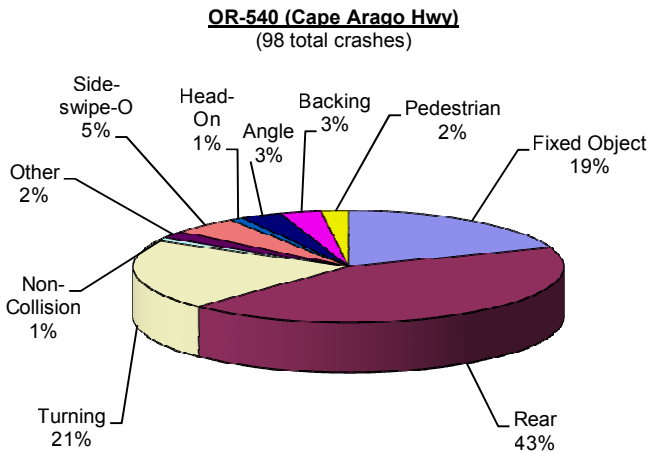
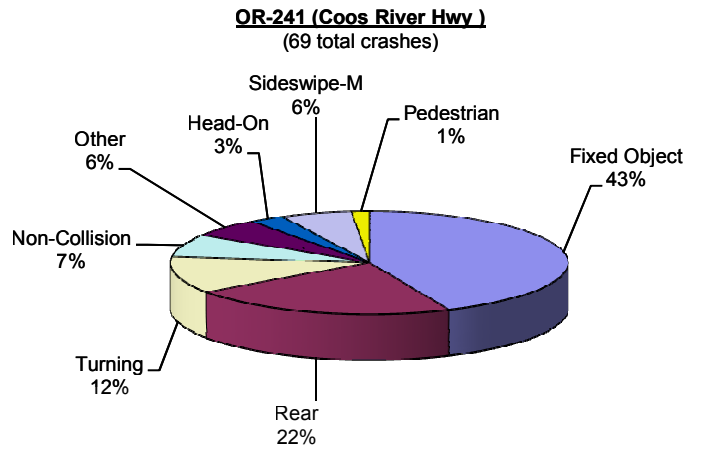
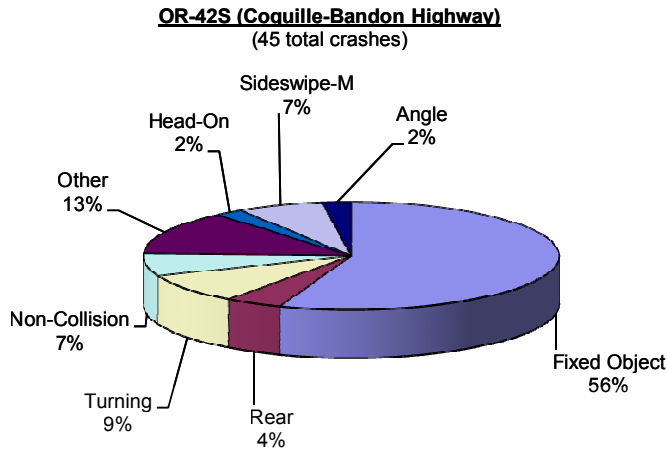
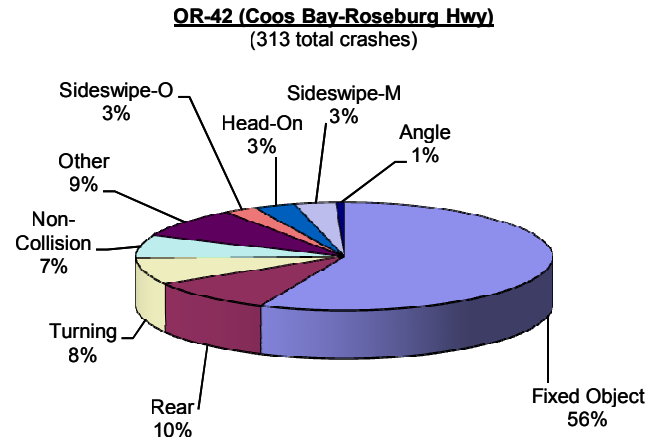
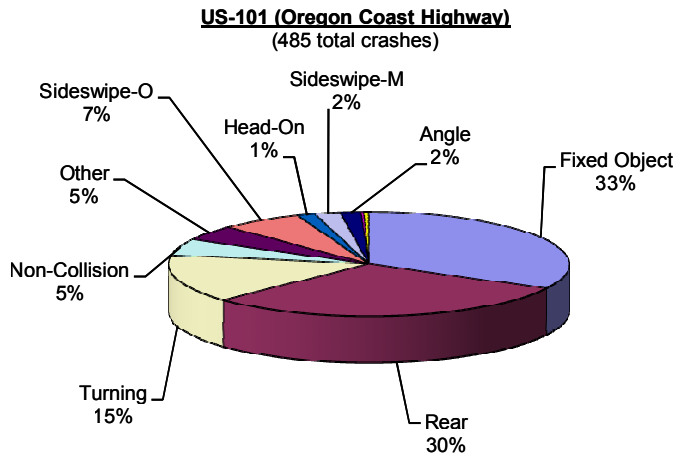


Figure 4-3
Crashes by Collision Type: State Highways
(2003-2007 Reported Crashes)
Coos County TSP Update

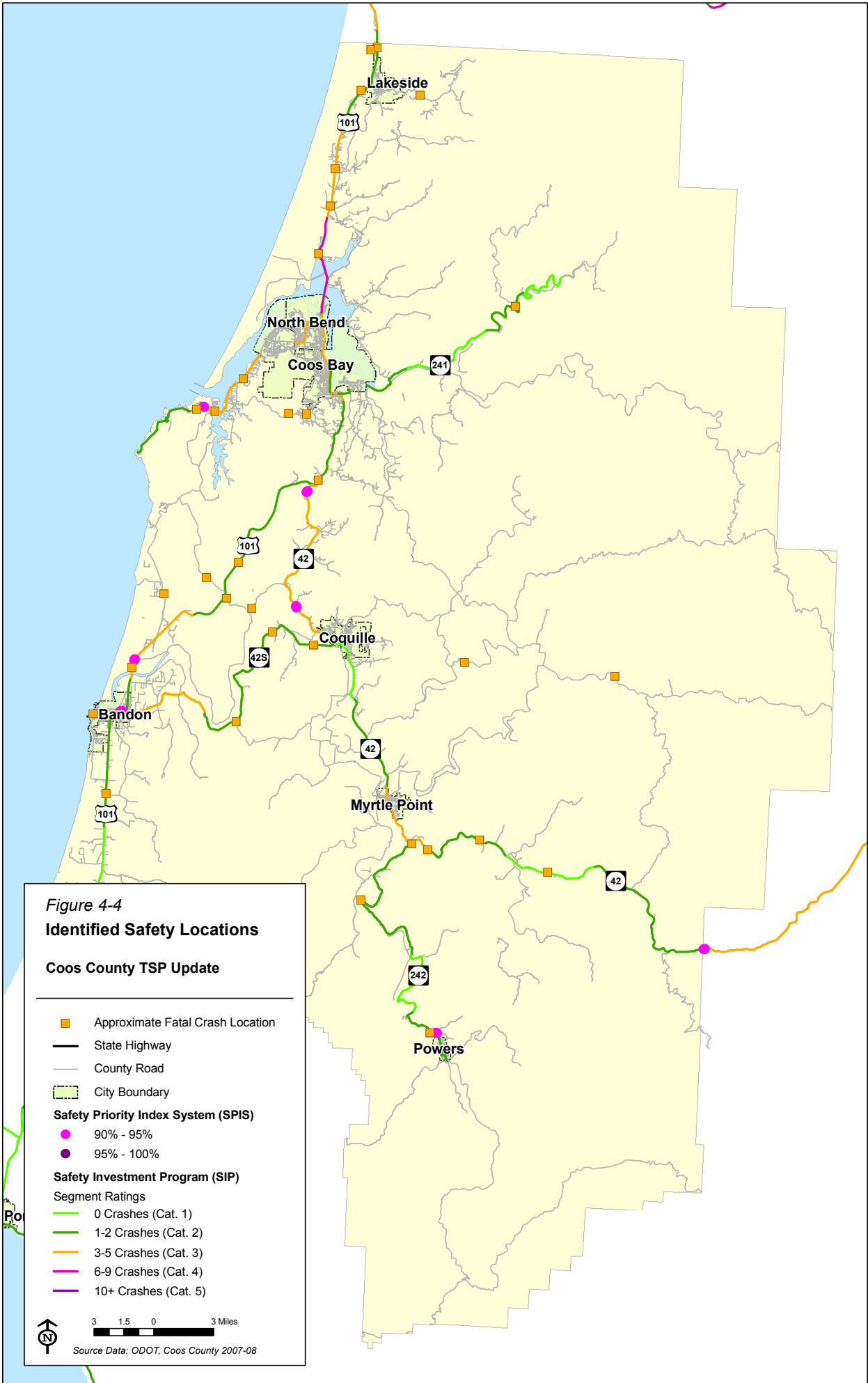


Figure 4-4
Identified Safety Locations

Coos County TSP Update

- Approximate Fatal Crash Location
- State Highway
- County Road
- City Boundary
- Safety Priority Index System (SPIS)**
- 90% - 95%
- 95% - 100%
- Safety Investment Program (SIP)**
- Segment Ratings**
- 0 Crashes (Cat. 1)
- 1-2 Crashes (Cat. 2)
- 3-5 Crashes (Cat. 3)
- 6-9 Crashes (Cat. 4)
- 10+ Crashes (Cat. 5)



3 1.5 0 3 Miles

Source Data: ODOT, Coos County 2007-08

Table 4-6. Crash History for State Highways (2003-2007)

Route	Name	Fatal Crashes	Total Crashes	Average Crashes Per Year
US 101	Oregon Coast	10	485	97
OR 42	Coos Bay-Roseburg	4	313	63
OR 540	Cape Arago	3	98	20
OR 241	Coos River	1	69	14
OR 542	Powers	2	48	10
OR 42S	Coquille-Bandon	2	45	9
Total		22	1058	212

Source: ODOT Crash Analysis Reporting System

Average Crash Rates

The first factor is a computed average crash rate, which compares the number of crashes with the ADT volume and the length of the segment analyzed. The crash rate, as summarized in Table 4-7 for a stretch of roadway is typically calculated as the number of crashes per million vehicle miles (crashes/mvm) traveled along that segment of roadway.

Table 4-7. Historic Crash Rates for State Highways

Highway/Segment	Milepost	Crashes per Million Vehicle Miles		
		2007	2006	2005
US 101 (Oregon Coast Highway)				
Coos/Douglas County Line to Lakeside (Rural)	220.58-221.37	0.00	0.88	0.00
Lakeside to North Bend (Rural)	222.09-234.01	0.59	0.58	0.62
Coos Bay to End of Urban Area (Suburban)	239.22-239.63	2.26	1.58	1.61
Coos Bay to Bandon (Rural)	239.63-260.64	0.81	0.51	0.61
Bandon to Coos/Curry County Line (Rural)	274.84-285.78	0.79	0.42	0.73
OR 42 (Coos Bay-Roseburg Highway)				
US 101 to Coquille (Rural)	0.00-10.15	0.80	0.59	1.08
Coquille to Myrtle Point (Rural)	12.08-20.01	0.23	0.18	0.69
Myrtle Point to Coos/Douglas County Line (Rural)	21.83-44.95	0.69	0.81	0.64
OR 42S (Coquille-Bandon Highway)				
Bandon-Coquille (Rural)	0.17-16.78	1.53	1.41	1.06
OR 241 (Coos River Highway)				
US 101 to Coos Bay (Suburban)	0.00-0.72	1.65	1.97	1.17
Coos Bay to End Highway (Rural)	2.19-19.15	3.08	0.72	1.27
OR 540 (Cape Arago Highway)				
Coos Bay to End Highway (Rural)	4.49-18.11	1.88	1.44	1.49
OR 542 (Powers Highway)				
OR 42 to Powers (Rural)	0.00-17.52	1.92	1.14	1.13
Statewide Average Suburban Non-Freeway		1.17	1.21	1.20
Statewide Average Rural Non-Freeway		0.79	0.77	0.77

Source: State Highway Crash Rate Tables (Oregon), 2007

Crash rates that exceed the statewide average for similar roadways (shown at the bottom of Table 4-7) are highlighted in black. Countywide, there are numerous locations which exceed the statewide average crash rates.

Safety Priority Index System (SPIS)

The SPIS is a method used in Oregon to identify safety problem areas along state highways. Highways are evaluated in approximately one-tenth mile increments (often grouped into larger segments). Each year these segments are ranked by assigning a “SPIS score” based on the frequency and severity crashes observed, while taking traffic volume into account. When a segment is ranked in the top 10% of the index, a crash analysis is typically warranted and corrective actions are considered. There are 11 highway segments identified in the top 10% of the SPIS rankings within Coos County.

Safety Investment Program (SIP)

Oregon uses the SIP to prioritize investments at identified safety locations through the Statewide Transportation Improvement Program (STIP). SIP locations are broken into five different categories based upon the frequency and severity of observed crashes within a three-year study period. The categories are categorized as follows:

- Category 1: 0 (no) fatal or injury A (serious) crashes
- Category 2: 1 to 2 fatal or injury A crashes
- Category 3: 3 to 5 fatal or injury A crashes
- Category 4: 6 to 9 fatal or injury A crashes
- Category 5: 10 or more fatal or injury A crashes.

Funding is generally targeted at locations with category rankings 3 through 5. There are 46 SIP locations along state highways in Coos County. Of the SIP locations, 14 are category 3 or higher.

Safety Evaluation by Corridor

The crash patterns, rates, SPIS, and SIP locations are described for each corridor.

US 101 (Oregon Coast Highway)

There were 485 ODOT reported crashes along US 101 during the five-year analysis period, which results in an annual average of 97 crashes. Ten of the reported crashes were fatal collisions. The majority of crashes along this corridor were fixed object (33%), rear-end (30%), or turning (15%) collisions (see Figure 4-3).

The 10 fatal crashes that occurred along this corridor resulted from 4 fixed object, 2 pedestrian, 2 sideswipe-meeting, 1 turning, and 1 non-collision related collisions. Only 1 segment along this corridor experienced 2 fatalities during the analyzed period (approximate milepost 220.86-220.90). This segment contains a passing lane and a small turnout/forest access.

Average crash rates between milepost 239.22 and 239.63 (Coos Bay to end of urban area) are approximately 50% higher than the statewide average for similar roadways. This section is in an urban/suburban environment with frequent access points.

Table 4-8 summarizes the SPIS and SIP locations along US 101. There are 4 top 10% SPIS segments identified in 2008 along US 101 within Coos County. The first three SPIS locations correspond with SIP segments rates 3 or higher. In addition, US 101 has 16 SIP segments identified with four locations that are category 3 or higher.

Table 4-8. SPIS and SIP Locations (2005-2007) – US 101

Rating System	Milepost		SIP Information		SPIS Score
	Beginning	Ending	No. of Crashes	Category	
SPIS	235.4	235.5	-	-	52.14
SPIS	235.43	235.54	-	-	47.71
SPIS	258.92	259.09	-	-	48.01
SPIS	273.59	273.77	-	-	46.41
SIP	225	230	4	3	-
SIP	230	235	6	4	-
SIP	235	240	3	3	-
SIP	255	260	3	3	-

Sources: ODOT Safety Priority Index System (2008) and Oregon Safety Improvement Program, 2008

OR 42 (Coos Bay-Roseburg) Highway

There were a total of 313 ODOT reported crashes along OR 42 during the five-year period analyzed, which results in an annual average of 63 crashes. Four of the reported were fatal collisions. The majority of crashes along this corridor were fixed object (56%), rear-end (10%), or turning (8%) collisions. Over half (170 of 313) of the crashes along this corridor occurred between mileposts 0.00 (US 101) and 7.0. Other clusters of crashes occurred near mileposts 9.0, 13.0, 24.0, and 43.0.

The 4 fatal crashes that occurred along this corridor resulted from 3 fixed object, and 1 head-on related collision(s). There were no segments along this corridor that experienced greater than 1 fatal crash during the analyzed period; however, all fatal crashes occurred in the 9-mile section between milepost 23.5 and 32.3.

Average crash rates along OR 42 were generally at or below the statewide average for similar roadways. Only the segment between US 101 and Coquille (milepost 0.00-10.15) has a three-year average crash rate higher than the statewide average.

Table 4-9 summarizes the SPIS and SIP locations along US 101. There are 2 top 10% SPIS segments identified in 2008 along OR 42 within Coos County. The SPIS locations correspond with SIP segments rates 3 or higher. In addition, there are also 16 SIP locations identified along OR 42. Seven of the SIP locations are category 3 or higher.

Table 4-9. SPIS and SIP Locations (2005-2007) – OR 42

Rating System	Milepost		SIP Information		SPIS Score
	Beginning	Ending	No. of Crashes	Category	
SPIS	0.91	1.09	-	-	54.58
SPIS	7.91	8.09	-	-	45.53
SIP	0	5	5	3	-
SIP	5	10	5	3	-
SIP	20	25	4	3	-
SIP	45	50	5	3	-
SIP	50	55	3	3	-
SIP	55	60	3	3	-
SIP	70	77.2	4	3	-

Sources: ODOT Safety Priority Index System (2008) and Oregon Safety Improvement Program, 2008

OR 42S (Coquille-Bandon Highway)

There were a total of 45 ODOT reported crashes along OR 42S during the five-year period analyzed, which results in an annual average of approximately 9 crashes. Two of the reported crashes were fatal collisions. The majority of crashes along this corridor were fixed object (56%), turning (9%), or non-collision (7%) collisions. The 2 fatal crashes that occurred along this corridor resulted from 1 fixed object and 1 turning related collision. Crashes were relatively distributed throughout the corridor.

Average crash rates along OR 542 were almost double the statewide average for similar roadways (1.33 vs. 0.78).

Table 4-10 summarizes the SIP locations along OR 42; there are no SPIS locations. There are 3 SIP locations identified along OR 42S. One of the SIP locations is category 3.

Table 4-10. STIP and SIP Locations (2005-2007) – OR 42S

Rating System	Milepost		SIP Information		SPIS Score
	Beginning	Ending	No. of Crashes	Category	
SIP	0	5	3	3	-

Sources: ODOT Safety Priority Index System (2008) and Oregon Safety Improvement Program, 2008

OR 241 (Coos River Highway)

There were 69 ODOT reported crashes along US 101 during the five-year period analyzed, which results in an annual average of approximately 14. One of the reported crashes resulted in a fatality(s). The majority of crashes along this corridor were fixed object (43%), rear-end (22%), or turning (12%) related. Crashes were relatively distributed throughout the corridor.

The fatal crash that occurred along this corridor resulted from a fixed object collision on a segment with a sharp horizontal curve and a single lane with no shoulder in each direction.

Average crash rates between milepost 2.19 and 19.15 (Coos Bay to end of highway) are more than double the statewide average for similar roadways. This section is in a rural environment.

There are no SPIS locations along OR 241 but there are 4 SIP locations identified. None of the SIP locations are category 3 or higher.

OR 540 (Cape Arago Highway)

There were 98 ODOT reported crashes along OR 540 during the five-year period analyzed, which results in an annual average of 20 crashes. Three of the reported crashes were fatal collisions. The majority of crashes along this corridor were rear-end (44%), fixed object (19%), rear-end (10%), or turning (20%) collisions. Most of the reported crashes occurred in the urban segments which have frequent access points. Moreover, 84 of the 98 reported crashes (85%) occurred between milepost 4.5 and 8.5.

Although the most frequent collision types on OR 540 were rear-end and turning related, 2 of the 3 fatal crashes that occurred along this corridor resulted from fixed-object collisions in the area which experience a low frequency of crashes (between milepost 9.0 and 10.0). The remaining fatal crash resulted from a rear-end collision.

Average crash rates along OR 540 were approximately double the statewide average for rural roadways. Although this section of the highway is classified as a rural environment, much of it passes through suburban segments (where most of the crashes occurred). Even if the average crash rate is compared to a statewide suburban crash rate, OR 540 would be 34% higher than the average crash rate.

Table 4-11 summarizes the SPIS and SIP locations along OR 540. There are 4 top 10% SPIS segments identified in 2008 along OR 540 within Coos County. All of the SPIS locations correspond with SIP segments rates 3 or higher. In addition, there are also 3 SIP locations identified along OR 42; two locations are category 3 or higher.

Table 4-11. SPIS and SIP Locations (2005-2007) – OR 540

Rating System	Milepost		SIP Information		SPIS Score
	Beginning	Ending	No. of Crashes	Category	
SPIS	0.04	0.13	-	-	53.45
SPIS	0.68	0.86	-	-	61.49
SPIS	1.93	2.05	-	-	50.94
SPIS	9.19	9.33	-	-	46.60
SIP	-0.05	5	3	3	-
SIP	5	10	5	3	-

Sources: ODOT Safety Priority Index System (2008) and Oregon Safety Improvement Program, 2008

OR 542 (Powers Highway)

There were 48 ODOT reported crashes along OR 542 during the five-year period analyzed, which results in an annual average of approximately 10 crashes. Two of the reported crashes were fatal collisions. The majority of crashes along this corridor were fixed object (63%), non-collision (13%), or turning (8%) collisions. The 2 fatal crashes that occurred along this corridor resulted from fixed object related collisions. Crashes were distributed throughout the corridor.

Average crash rates along OR 542 were nearly double the statewide average for similar roadways (1.40 vs. 0.78).

Table 4-12 summarizes the SPIS and SIP locations along OR 540. There is one top 10% SPIS segments identified in 2008 along OR 542 within Coos County. This segment is located from milepost 17.29 to 17.46 (SPIS score =51.78). There are also 4 SIP locations identified along OR 542. None of the SIP locations are category 3 or higher.

Table 4-12. SPIS and SIP Locations (2005-2007) – OR 542

Rating System	Milepost		SIP Information		SPIS Score
	Beginning	Ending	No. of Crashes	Category	
SPIS	17.29	17.46	-	-	51.78

Sources: ODOT Safety Priority Index System (2008) and Oregon Safety Improvement Program, 2008

Demographics

Demographic data will be used in the development of travel forecasts for the Coos County transportation system. Baseline population and employment data along with other demographic statistics are discussed below.

Population

Population distribution for the urban and rural areas within Coos County is summarized in Table 4-13.

According to the Oregon Blue Book, the 2007 overall population in Coos County was just over 63,000 residents. Population has grown 6.8 percent since 1990, an average of approximately 0.4 percent per year. Growth has been more rapid since 2000, an average growth rate of 0.7 percent per year.

Most of the growth has been in and around the urban areas with slower growth in the rural areas. The slower growth in rural areas in part reflects the incorporation of additional areas within city limits as communities grew. Bandon has grown the most in the last 17 years while Myrtle Point has lost population since 1990.

Table 4-13. Coos County Population

Location	Population				
	2007	2000	1990	1990-2007 Growth	2000-2007 Growth
Urban	38,305	36,541	35,857	6.8%	4.8%
<i>Bandon</i>	3,235	2,833	2,215	46.0%	14.2%
<i>Coos Bay</i>	16,210	15,374	15,076	7.5%	5.4%
<i>Coquille</i>	4,215	4,184	4,121	2.3%	0.7%
<i>Lakeside</i>	1,545	1,421	1,437	7.5%	8.7%
<i>Myrtle Point</i>	2,540	2,451	2,712	-6.3%	3.6%
<i>North Bend</i>	9,830	9,544	9,614	2.2%	3.0%
<i>Powers</i>	730	734	682	7.0%	-0.5%
Rural	24,745	26,238	24,416	1.3%	-5.7%
Total	63,050	62,779	60,273	4.6%	0.4%

Source: Oregon Blue Book, 2007

Employment

Total non-farm employment within Coos County is summarized in Table 4-14.

Table 4-14. Coos County Non-Farm Employment Data

Location	Employment		
	2008	2001	2001-2008 Growth
Private	16,420	15,330	7.1%
Government	6,220	5,840	6.5%
Total Non-Farm	22,640	21,170	6.9%

Source: Oregon Employment Department

According to the Oregon Employment Department, the 2008 estimated non-farm employment in Coos County was just over 22,640 jobs with almost 73 percent in the private sector. Total employment has grown 6.9 percent since 2001, an average of approximately 1.0 percent per year. Growth in the private sector has been slightly faster than growth in the government sector.

Comparing Table 4-14 with Table 4-13 shows that employment in Coos County has been growing at a faster rate than population. However, with recent downward trends in employment throughout the state, growth rates may be more similar.

Travel Characteristics

Understanding system user travel characteristics can be helpful in identifying potential measures that could be implemented to manage demand on the transportation system. Data from the 2000 US Census is available to illustrate some county-wide travel behaviors.

Travel Mode Distribution

US Census data includes statistics on how Coos County residents commute to work. These data are summarized in Table 4-15.

Table 4-15. Coos County Journey-to-Work Trips

Trip Type	2000 Census	
	Trips	Percent
Private Vehicle	22,393	89.6%
<i>Drove Alone</i>	19,292	77.2%
<i>Carpooled</i>	3,101	12.4%
Public Transportation	160	0.6%
Motorcycle	26	0.1%
Bicycle	89	0.4%
Walk	778	3.1%
Other	275	1.1%
Work at Home	1289	5.2%
Total	25,010	100.0%

Source: US Bureau of Census, 2000 Census

The current transportation system in Coos County is relies almost exclusively on the automobile, except in more populated areas where walking or riding a bicycle is an option. As a result, Coos County residents use automobiles for their primary mode of travel to work. Almost 90 percent of all trips to work were made in private vehicles with single-occupancy vehicles accounting for more than 77 percent and carpooling accounting for more than 12 percent. The next most common mode of travel is actually the non-commute option of working at home at more than 5 percent.

Commute Trip Times

Table 4-16 summarizes travel time statistics for commute trips from the US Census data.

In Coos County, more than 28 percent of the journey-to-work trips take less than 10 minutes and 35 percent were between 10 and 20 minutes. Many of these shorter trips were made within cities or within the urbanized area surrounding the cities. Travel between most cities in Coos County takes at least 30 minutes. Almost 19 percent of the trips were 30 minutes or longer, which may reflect some intercity commuting within the county or possibly to other communities outside the county.

Use of the automobile for commuting is the dominant travel choice even for those who commute less than five minutes. While a five-minute automobile trip could cover a number of miles, a five-minute walk will likely cover approximately one-quarter to one-half mile and a five-minute bike ride will likely cover one to one and one-half miles.

Table 4-16. Coos County Travel Time to Work

Trip Type	2000 Census	
	Trips	Percent
Less than 5 minutes	1,694	6.8%
5 to 9 minutes	5364	21.4%
10 to 14 minutes	4651	18.6%
15 to 19 minutes	4103	16.4%
20 to 29 minutes	3,068	12.3%
30 to 39 minutes	2,411	9.6%
40 to 59 minutes	1216	4.9%
60 to 89 minutes	515	2.1%
90 minutes or longer	699	2.8%
Work at Home	1,289	5.2%
Total	1,694	6.8%

Source: US Bureau of Census, 2000 Census

A commonly used threshold for acceptable walking distances is one-quarter mile. At a reasonable pace, an average person can walk approximately one-quarter mile in five minutes. Therefore, the almost 7 percent of work trips in Coos County taking less than five minutes represents the trips that could potentially be made by walking. For walking to occur safely and efficiently, there must be adequate infrastructure (i.e., sidewalks, pathways, shoulders) in place to support it. Since most pedestrian destinations are located in and around the cities, the most likely places to increase pedestrian activity are the urban fringes around the cities.

Departure to Work Distribution

The spread of departure to work times over a 24-hour periods is summarized in Table 4-17.

Table 4-17. Coos County Departure to Work

Trip Type	2000 Census	
	Trips	Percent
12:00 a.m. to 4:59 a.m.	1,380	5.3%
5:00 a.m. to 5:59 a.m.	1824	7.0%
6:00 a.m. to 6:59 a.m.	3,711	14.2%
7:00 a.m. to 7:59 a.m.	7,611	29.1%
8:00 a.m. to 8:59 a.m.	6,269	24.0%
9:00 a.m. to 9:59 a.m.	1,377	5.3%
10:00 a.m. to 10:59 a.m.	622	2.4%
11:00 a.m. to 11:59 a.m.	284	1.1%
12:00 p.m. to 3:59 p.m.	1720	6.6%
4:00 p.m. to 11:59 p.m.	1358	5.2%
Total	26,156	100.0%

Source: US Bureau of Census, 2000 Census

Over 29 percent of employees depart for work between 7:00 and 8:00 a.m., and another 38 percent depart in either the hour before or hour after the morning peak hour.

Assuming an average nine-hour workday, the corresponding afternoon peak can be determined for work trips. Using this methodology, the peak work travel hour would occur between 4:00 and 5:00 p.m., which corresponds to the peak hour of activity measured for most traffic volumes.

5. FUTURE TRANSPORTATION SYSTEM DEFICIENCIES

Chapter 5 presents transportation system deficiencies expected by the future year 2030. This section examines long-term population and employment growth forecasts for Coos County along with growth trends for state highways. This information is used to develop the traffic volume forecasts for use in the operational analysis.

Demographics

Demographic data is used in the development of travel forecasts for the Coos County transportation system. Baseline and forecast population and employment forecasts for Coos County are summarized in Table 5-1.

Table 5-1. Coos County Population and Employment Forecasts

Demographic	Year				Growth Rates			
					Historic		Forecast	
	2000	2001	2008	2030	Total	Annual	Total	Annual
Population ¹	62,779	-	63,210	64,929	0.7%	0.03%	2.7%	0.12%
Non-Farm Employment ²	-	21,170	22,640	27,500	6.9%	0.99%	21.5%	0.98%

Notes:

1. Population data and forecasts based on data from the Forecasts of Oregon's County Populations and Components of Change, 2000-2040 released by the Oregon Office of Economic Analysis in April 2004.
2. Historic data from Oregon Employment Department. Employment forecast is prorated from the Industry Employment Forecast, 2006-2016, for Coos and Curry Counties which is published by the Oregon Employment Department in June 2007.

Source: Oregon Office of Economic Analysis and Oregon Employment Department

Population

According to the Oregon Office of Economic Analysis (OEA), overall population in Coos County is expected to increase by 2.7 percent between 2008 and 2030, which would result in a straight-line average growth rate of 0.12 percent per year. This growth rate is higher than the historic rate of 0.03 percent per year that was recorded between 2000 and 2008.

Employment

The Oregon Employment Department prepared a 10-year (2006 through 2016) employment forecast for Coos and Curry Counties combined, which showed an average growth rate of almost one percent per year. This rate is similar to the historic rate for Coos County over the 2001 through 2008 period. To estimate 2030 forecasts, this annual growth rate was applied to the 2008 employment, resulting in an employment forecast of 27,500. The total growth from 2008 to 2030 is estimated at 21.5 percent.

Comparing employment growth with population growth shows that employment in Coos County has been growing at a faster rate than population and that trend is expected to continue into the future.

Future Traffic Volumes

The future year (2030) traffic volume estimates for Coos County were developed based on county growth forecasts and ODOT estimates of traffic growth on state highways. Consideration of different roadway characteristics was another factor used in developing the future year volume estimates.

Three growth assumptions were applied in developing the forecast traffic volumes:

1. On state highways, the ODOT future volume tables were used to estimate 2030 traffic volumes. In the North Bend/Coos Bay urban area, where a travel demand forecasting model has been developed, traffic forecasts on the highways are derived from the model growth trends. Forecasts for the remaining highway segments are based on trendline growth patterns derived from historical traffic data.
2. On coastal county roads which serve tourism-related activities, the growth rate from the intersecting state highway was applied. The state highway growth trends are assumed to more closely reflect growth on these roadways than the county road growth rate. The state highway growth trends are also similar to the employment growth forecasts which include stronger growth in the retail, leisure, and hospitality sectors.
3. On inland county roads which primarily serve the local communities in the county, a separate county road growth rate was applied. These roads are generally more tied to the housing development patterns of the community rather than the traffic volumes on the state highway.

The specific daily and hourly traffic forecasts developed using these assumptions are discussed below.

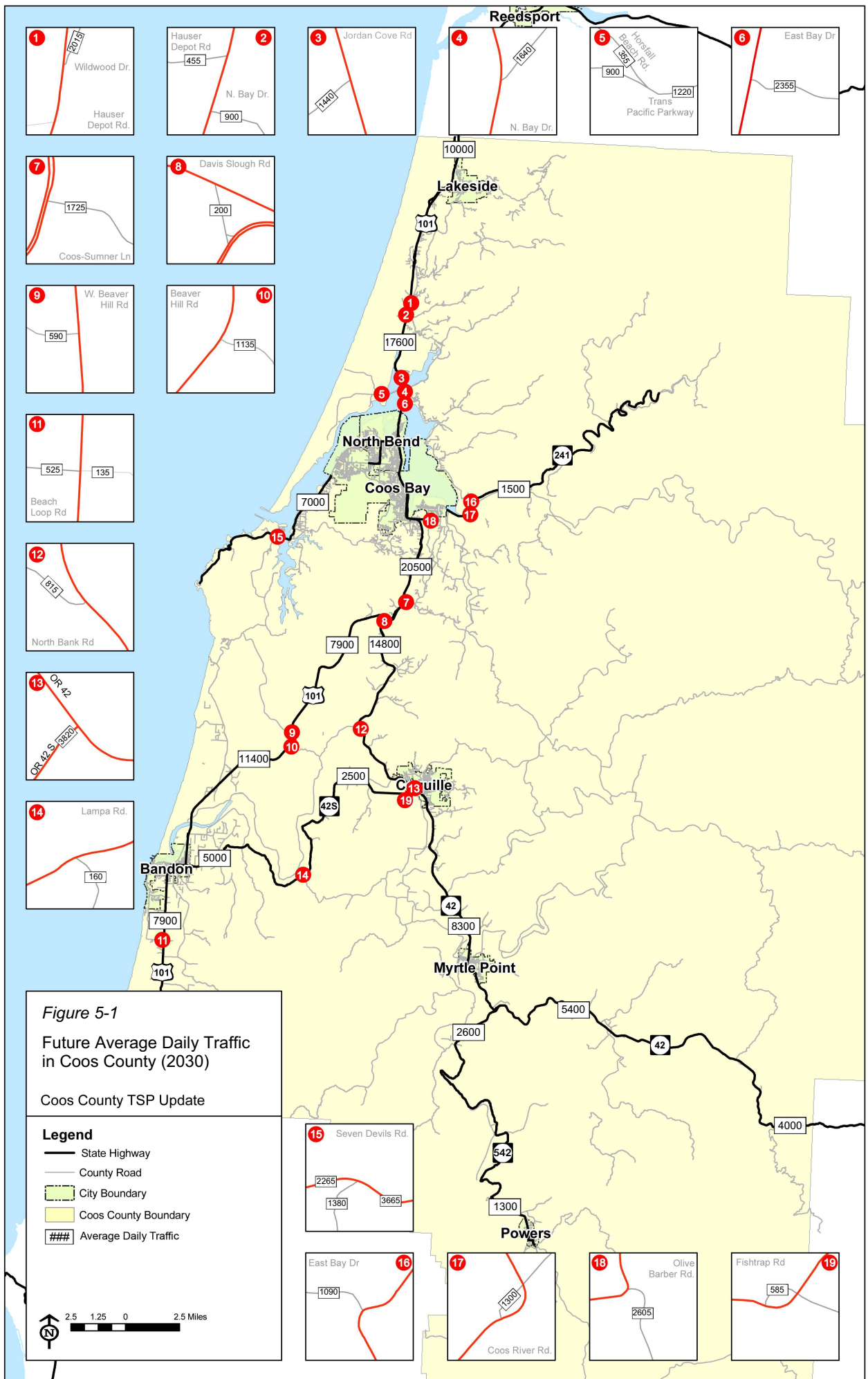
Average Daily Traffic

Figure 5-1 illustrates estimated ADT volumes at key locations on state highways and major county roads.

County Roads

The 2030 ADT volumes on selected roadways in Coos County were estimated from the 2008 traffic volumes and the growth assumptions outlined above. Growth along most county roadways are estimated under assumption #3 above (3 percent growth assumed); however, four coastal county roads are anticipated to experience higher tourism-related growth (growth assumption #2):

- Hauser Depot Road - 27 percent growth
- Jordan Cover Road - 27 percent growth
- Transpacific Parkway - 27 percent growth
- Beach Loop Drive - 27 percent growth



Some of the most heavily used county roads with ADT volumes between 1,000 and 3,000 vehicles per day include:

- East Bay Drive
- Olive Barber Road
- Wildwood Road
- Coos-Sumner Lane
- Beaver Hill Road
- Seven Devils Road
- Jordan Cove Road
- North Bay Road
- Transpacific Parkway
- Coos River Road

The ADT volumes estimated for other roadways around the county were under 1000 vehicles per day.

State Highways

The 2030 ADT volumes on the state highways in Coos County were taken from the ODOT 2007 Traffic Volume Tables, the 2027 Future Volume Tables, and the growth assumptions outline above.

US 101 (Oregon Coast Highway)

Traffic volumes on the sections of US 101 outside cities are expected to vary from a low of 6,500 at the Coos-Curry county line to over 31,100 just south of the Coos Bay city limits. Growth in ADT is expected to range between 17 percent (North Bend city limits) and 40 percent (Coos-Curry County Line), with fluctuations throughout the county. Volumes at the north end of US 101 at the Coos-Douglas county line (M.P. 220.58) are estimated at just over 8,600 ADT. Moving southward along the highway, volumes would continue to grow until they are almost double (17,600 ADT) at the North Bend city limits, with approximately 18 percent growth. Volumes just south of the Coos Bay city limits are expected to be over 31,100 ADT, but they would drop off considerably in less than half a mile; just south of the OR 241 junction, ADT is estimated at 20,500 (39 percent growth). Volumes are expected to drop again dramatically just south of the OR 42 junction with ADT near 7,900 (22 percent growth). They are estimated to remain similar near Bandon with 7,900 ADT (22 percent growth), but drop to their lowest level (6,500 ADT and 40 percent growth) at the Coos-Curry county line (M.P. 285.78).

OR 42 (Coos Bay-Roseburg) Highway

Outside city limits, traffic volumes on OR 42 are expected to vary from a high of 14,800 ADT, just east of the junction with US 101, to a low of 4,000 ADT at the Coos-Douglas county line. Growth in ADT is estimated at 40 percent just east of US 101, drop to 8 percent west of Myrtle Point, and fluctuate towards 29 percent at the County line.

OR 42S (Coquille-Bandon Highway)

Traffic volumes on OR 42S are expected to be highest just east of Bandon with an ADT of approximately 5,000 (22 percent growth). They would drop off to an estimated low of 1,700 ADT between Bandon and Coquille and then increase as they approach the Coquille city limits with an ADT of 2,500 (9 percent growth).

OR 241 (Coos River Highway)

Traffic volumes are highest on the section of OR 241 between US 101 and where it enters the Coos Bay city limits with approximately 10,900 ADT. After exiting Coos Bay, the ADT is expected to be 4,400, dropping to around 1,500 ADT over the next two miles and continuing to decrease until the end of the roadway. East of the city limits, growth is estimated at approximately 17 percent.

OR 540 (Cape Arago Highway)

At the south city limits of Coos Bay, the traffic volumes on OR 540 are approximately 10,600 ADT. Going southward, they drop to approximately 7,000 ADT (41 percent growth) in the community of Charleston and then drop further to 1,600 ADT at the entrance to the state parks.

OR 542 (Powers Highway)

Traffic volumes on OR 542 are expected to be highest just south of OR 42 at 2,600 ADT (56 percent growth) dropping to near 1,300 ADT (38 percent growth) at the Powers city limits.

Design Hourly Volumes

The design hourly volumes (DHVs) for 2030 were derived using the existing relationship between DHVs and ADT volumes. As detailed in the *Chapter 4: Existing Transportation System Deficiencies*, the DHVs (30th highest hour) range from 10 to 16 percent of the ADT based on permanent counters located on highways in Coos, Douglas, and Lane Counties. These data also show that the 30th highest hour as a percentage of ADT fluctuates minimally each year. The DHVs are presented under the traffic operations section of the report in the analysis of two-lane highways (see Table 4-3).

Traffic Operations

Traffic operations were analyzed for selected roadway segments and intersections throughout Coos County. Operations were evaluated according to the methodologies in the 2000 Highway Capacity Manual (HCM)⁸.

Operational Criteria

Chapter 4: Existing Transportation System Deficiencies provides a detailed description of the operational outputs and criteria used in the traffic operations analysis. The operational standards applicable to the state highways in Coos County are found in the Oregon Highway Plan. Standards found in the most recent version of the Oregon Highway Plan are summarized in Table 4-2.

Oregon Highway Plan (OHP) mobility standards are applied for existing and future no build conditions (no/limited geometric changes). Highway Design Manual (HDM) mobility standards

⁸ Highway Capacity Manual, Transportation Research Board, Washington DC, 2000.

are applied in conjunction with any design changes. HDM standards can be found in Table 10-1 of the most recent version of the manual.

A maximum v/c ratio of 0.85 should be maintained for all County-maintained intersections during a typical weekday peak hour, for existing facilities and design modifications.

Although v/c standards are applied for county and state facilities, level of service (LOS) is a widely recognized and accepted measure and descriptor of traffic operations and is therefore also presented.

Roadway Segment Operations

Two-lane highway operations were evaluated for selected roadway segments on the state highway system. *Chapter 4: Existing Transportation System Deficiencies* provides a detailed description of the methodology used in the traffic operations analysis for two-lane highways. The resulting v/c ratio and LOS for each two-lane highway segment are shown in Table 5-2.

Table 5-2. Summary of Two-Lane Highway Operations – Future Condition (2030)

Location	Design Hour Volume (vph)	Passenger Car Equivalent Volume ¹ (vph)	Two-way Capacity (pcph)	V/C Ratio ²	Percent Time Spent Following	LOS ³
US 101 At ATR 06-001: South of Coos-Douglas Line	1235	1350	3,200	0.44	72	D
At ATR 06-004: South of Bandon	920	1006	3,200	0.33	61	C
At ATR 06-009: North of OR 42	2130	2311	3,200	0.76	88	E
0.10 mile south of Seven Devils Road	985	1083	3,200	0.37	66	C
AT Coos-Curry County Line	765	863	3,200	0.35	62	C
OR 42 Northwest of Powers Highway Junction	645	791	3,200	0.24	49	B
OR 42S East of US 101	595	638	3,200	0.21	45	B
West of Coquille	300	336	3,200	0.12	26	A
OR 241 East of Coos Bay	180	192	3,200	0.50	74	D
OR 540 East of Charleston	840	874	3,200	0.06	17	A
OR 542 South of OR 42	310	346	3,200	0.37	60	C

Notes:

1. The passenger-car equivalent volumes are adjusted for peak hour factor, for grade, and heavy vehicles.
2. The volume used to compute v/c ratio is the calculated passenger-car equivalent flow rate in vehicles per hour (vph) as described in Chapter 20 of the *2000 Highway Capacity Manual*.
3. LOS is defined in terms of both % time-spent-following and average travel speed for Class I two-lane highways and percent time-spent-following for Class II two-lane highways.

Source: David Evans and Associates, Inc.

One of the 11 two-lane highway segments that were analyzed are expected to operate with v/c ratios above the standards outlined in the 1999 OHP (see Table 4-2). This segment is located on US 101 just north of North Bend. At each of these highway segments, slower speeds and long platoons of vehicles (i.e., vehicles grouped together behind a slower-moving vehicle) are expected, as well as an increase in passing difficulty. Some of the other highway segments

shown in the table would have acceptable v/c ratios but would experience LOS D conditions indicating longer vehicle platoons and difficulty passing.

Intersection Operations

Twenty-one (21) intersections located throughout Coos County were analyzed to determine existing intersection operations. *Chapter 4: Existing Transportation System Deficiencies* provides a detailed description of the methodology used in the intersection operations analysis. The results of the intersection analysis are shown in Table 5-3.

Table 5-3. Summary of Intersection Operations – Future Condition (2030)

Intersection	Critical Movement¹	V/C Ratio²	LOS²
US 101 at Wildwood Road	Westbound left, right	0.58	E
Hauser Depot Road	Westbound left, through, right	0.45	F
North Bay Road (Hauser)	Westbound left, through, right	0.12	C
Jordan Cove Road	Eastbound left, right	0.41	D
North Bay Road (South)	Westbound left, right	0.50	E
East Bay Drive (signalized)	Overall	0.77	A
Coos-Sumner Lane	Westbound left, right	0.23	C
Davis Slough Road	Northbound left, right	0.04	B
West Beaver Hill Road	Eastbound left, right	0.06	B
Beaver Hill Road	Westbound left, right	0.17	C
Beach Loop Road	Eastbound left, through, right	0.13	C
OR 42 at Davis Slough Road	Southbound left, right	0.01	B
North Bank Road	Eastbound left, right	0.09	B
Fishtrap Road	Southbound left, right	0.04	B
OR 42S	Eastbound left, right	0.34	C
OR 42S at Lampa Lane	Northbound left, right	0.01	A
OR 241 at Olive Barber Road	Westbound left, right	0.64	F
Coos River Road	Eastbound right	0.05	A
East Bay Road	Northbound left	0.07	A
OR 540 at Seven Devils Road	Northbound left, through, right	0.08	A
Trans-Pacific Highway at Horsefall Road	Southbound left, right	0.03	A

Notes:

1. The critical movement for unsignalized intersections is the intersection movement with the worst v/c ratio; generally this movement is on the minor approach. At signalized intersections, the critical movement actually reflects the overall intersection operations rather than any single movement.
2. The v/c ratio and LOS are calculated following the methodologies in Chapters 16 and 17 of the *2000 Highway Capacity Manual*.

Source: David Evans and Associates, Inc.

As shown in Table 5-3, all but one of the 21 analyzed intersections are expected to operate within ODOT's mobility standards outlined in the 1999 OHP under design (30th highest) hour conditions. The signalized intersection of East Bay Drive at US 101 would have a v/c ratio of 0.77 but would operate at LOS A, indicating that movements on US 101 would not experience significant delay.

The remaining intersections all meet the OHP mobility standards, but some of the intersections along US 101 between Wildwood Road and East Bay Drive would experience longer delays (LOS D and E) during peak periods. One other intersection, Olive Barber Road at OR 241 is expected to experience long delays during peak periods. Because this intersection serves primarily residential traffic, delays may be longer in the morning than in the afternoon.

6. TRANSPORTATION SYSTEM PLAN

The purpose of this chapter is to provide a detailed transportation system plan that will achieve the goals and objectives set forth by the Coos County community. Components of the TSP include roadway standards, access management guidelines, and improvement plans for all modes. Under the modal plans, this chapter addresses improvements or strategies to meet the needs of all transportation modes appropriate for Coos County. It is expected that Coos County will ultimately adopt this TSP as the transportation component of their Comprehensive Plan.

This Chapter proposes changes/improvements in the following categories:

- Roadway System Plan
 - Street Design Standards
 - Access Management Standards
 - Traffic Operations Standards
 - Roadway Improvement Projects
 - Natural Hazard Mitigation Projects
- Pedestrian and Bicycle Plan
- Public Transportation Plan
- Rail Plan
- Airport Plan
- Pipeline Plan
- Water Plan

The potential projects identified in this Chapter include projects that have been identified for implementation in Coos County either through ODOT's Statewide Transportation Improvement Program (STIP), City Plans within the County, the County's road maintenance program, or any other planning mechanism.

Each potential project includes a location description, brief overview, and planning level cost estimate. Costs were estimated for design and construction using current unit costs, such as per linear foot, with a 40 percent contingency included to account for price escalation, utility relocations and other items that cannot be quantified at the planning level; however, cost estimates do not incorporate the purchase of right-of-way.

Roadway System Plan

The Coos County roadway system plan aims to provide the desired levels of mobility, access, maintenance, and safety over the next 20 years. The plan focuses on the County's collector and arterial system, although road standards are also provided for local roadways.

Functional Classification

The functional classification system for the Coos County roadway network includes arterials, rural major collectors, minor collectors, and local streets. Coos County recently upgraded the functional classification of a number of roadways for consistency with current uses or with state classifications. No additional changes are recommended as part of the TSP. The functional classification of the county network, including these recent upgrades, is shown in Figure 6-1.

A general description for the county functional classifications is presented below:

Arterials are the highest demand roadways that carry and distribute regional traffic between cities and counties. The emphasis is on serving through traffic will controlled and less frequent property access. The state highway system will continue to serve as the arterial network within Coos County.

Major collectors connect residential neighborhoods with smaller community centers and facilities, as well as providing access to the arterial system. They generally serve higher traffic demands and serve both through traffic as well as providing property access. They tie federal roads, minor collectors, and local roads to the arterial system and also serve as relief routes should an event result in the closure of one of the arterial routes. These roads also provide access to agricultural, forest, and recreational areas.

Minor collectors generally serve lower traffic demands than major collectors. They generally branch off from highway, arterial, or major collector roadways and provide access to agricultural, forest, recreational areas, and residential homes. Property access is generally a higher priority for minor collectors while through traffic movements are served as a lower priority.

Local streets primarily serve residential properties but can also serve commercial and industrial areas. Property access is the main priority; through traffic movement is not encouraged. They are designed to carry low traffic volumes.

County Road Design Standards

Roadway standards relate the cross sectional design of a roadway to its function. The function is determined by operational characteristics such as traffic volume, operating speed, safety, and capacity. Roadway standards are necessary to provide a community with roadways that are relatively safe, aesthetic, and easy to administer when new roadways are planned or constructed.

Rural road standards for County facilities outside of City UGBs are summarized in Table 6-1 and are shown graphically in Figure 6-2. More detailed specifications (i.e., subgrade width and depth, maximum grade, degree of roadway curvature, vertical clearance, etc.) are included in the Coos County Zoning and Land Development Ordinance. At their discretion, Coos County may choose to deviate from the adopted design standards for those roadways under County control.

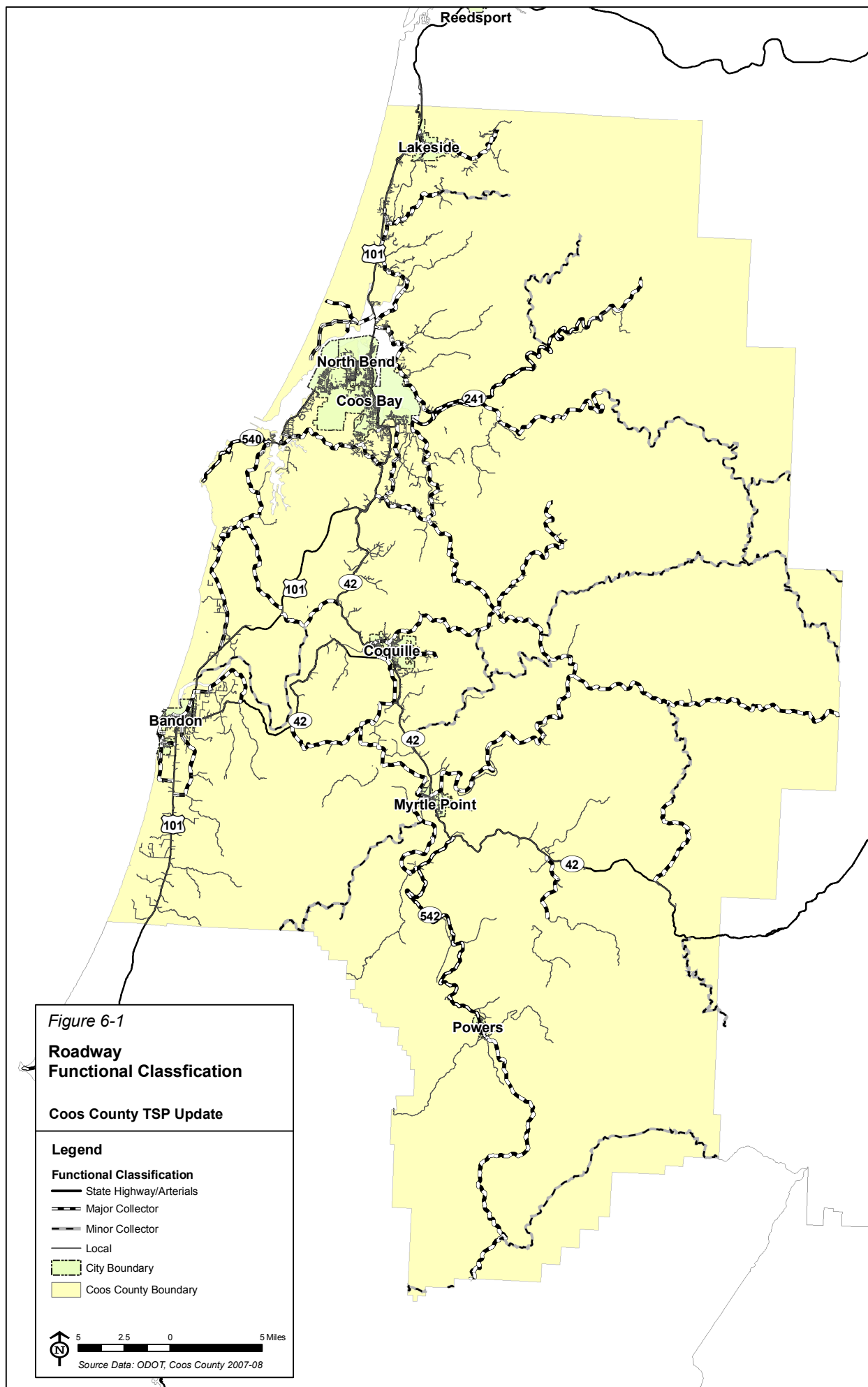


Figure 6-1
Roadway Functional Classification
Coos County TSP Update

Legend

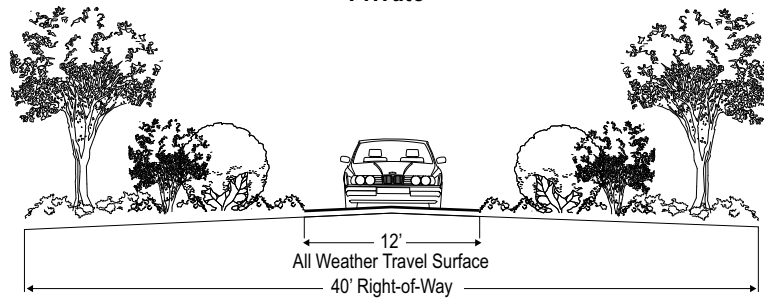
Functional Classification

- State Highway/Arterials
- - - Major Collector
- · - Minor Collector
- Local
- City Boundary
- Coos County Boundary

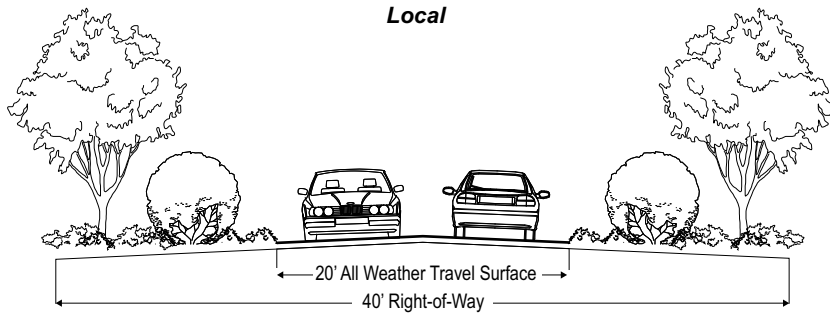
5 2.5 0 5 Miles

Source Data: ODOT, Coos County 2007-08

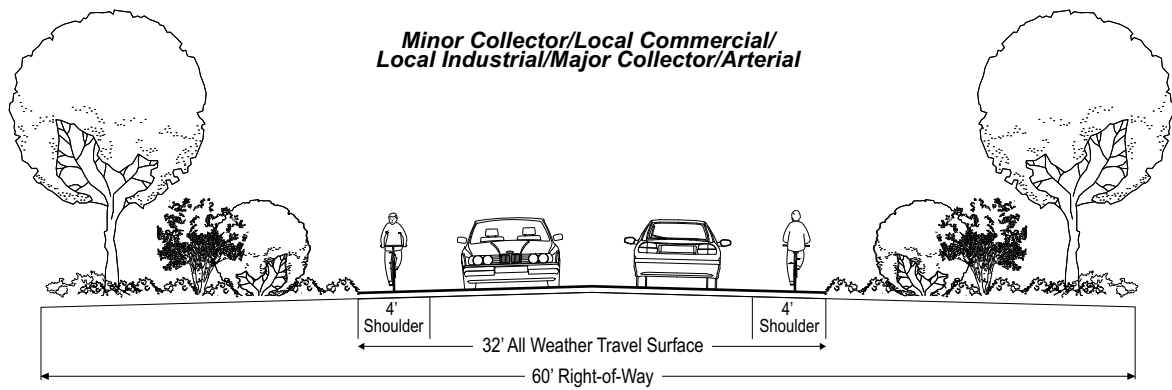
Private



Local



**Minor Collector/Local Commercial/
Local Industrial/Major Collector/Arterial**



Not to Scale

Figure 6-2
County Roads Typical Cross-Sections

Table 6-1. County Road Rural Design Standards

Roadway Classification	Average Daily Traffic	Roadway Width (feet) ¹			Right-of-Way Width (feet)
		Lanes	Shoulders	Total	
Private ²	0-150	-	-	12	40
Local Residential	0-600	10	-	20	40
Local Commercial/Industrial	0-600	12	4	32	60
Minor Collector	500-2,500	12	4	32	60
Major Collector and Arterial	>2,500	12	4	32	60

Notes:

1. Additional construction requirements are detailed in the Coos County Zoning and Land Development Ordinance.
2. Applicable to private roads constructed in conjunction with a residential partition.

The Coos County roadway system is predominantly rural; however, the county does have some roads within city UGBs. Construction or reconstruction of County facilities inside of City UGBs should follow the local jurisdiction's applicable road standards in order to facilitate a potential jurisdictional transfer in the future. For areas that fall within a City UGB or urban unincorporated community without specified standards, the standards identified in Table 6-2 and illustrated in Figure 6-3 shall apply.

Coos County recognizes that many of the existing roads do not meet these standards. Therefore, these standards shall be applied to newly constructed or, when feasible, reconstructed County roads.

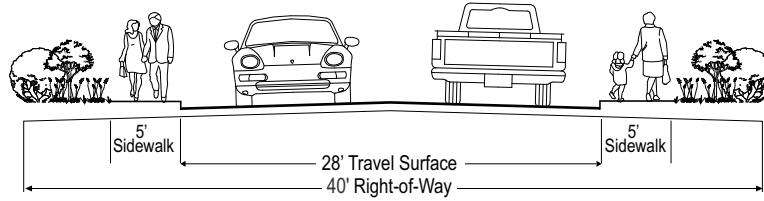
Table 6-2. County Road Design Standards – Within UGBs and Urban Unincorporated Communities

Roadway Classification	Average Daily Traffic	Roadway Width (feet) ¹				Sidewalk Width (feet)	Right-of-Way Width (feet)
		Travel Lanes	Bike Lanes ²	On-Street Parking	Total		
Local Residential ³	0-150	8-14	None	Unstriped	28	5	40
Local Commercial/Industrial ³	0-600	11-18	None	Unstriped	36	5	60
Minor Collector	500-2,500	10-12	None	6-8	36	5	60
Major Collector and Arterial							
2 Lanes	2,500-7,500	12	5-6	None	36	5	60
4 Lanes	>7,500	12-13	6	None	62	5	80

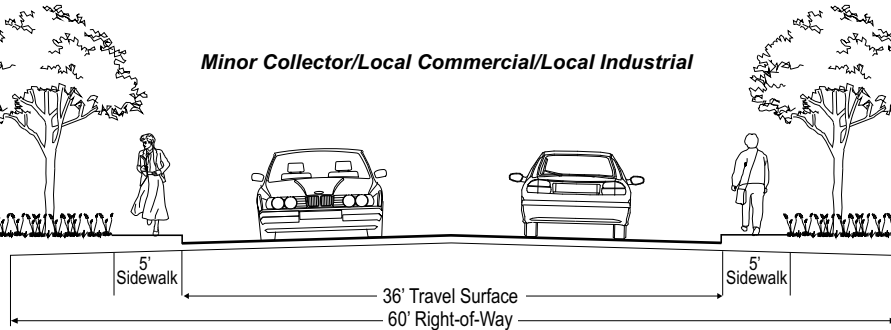
Notes:

1. Additional construction requirements are detailed in the Coos County Zoning and Land Development Ordinance.
2. Bike lanes are required on Major Collector and Arterial roads per the Transportation Planning Rule (OAR 660-012)
3. On-street parking may be permitted on local streets but would not be striped. Travel lane widths reflect variation in travelway with and without on-street parking (6-foot parking width assumed for residential and 7-foot width assumed for commercial/industrial).

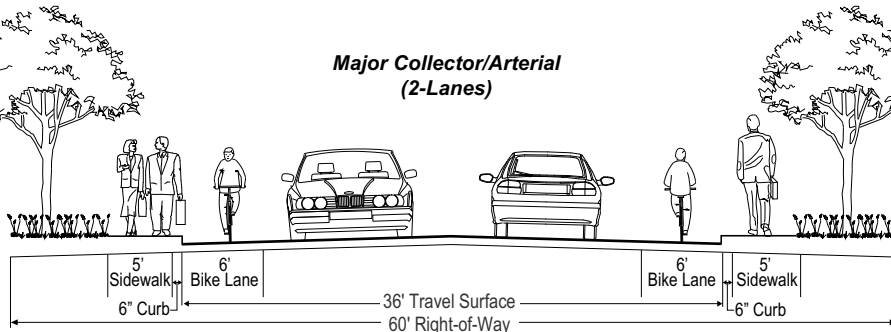
Local Residential



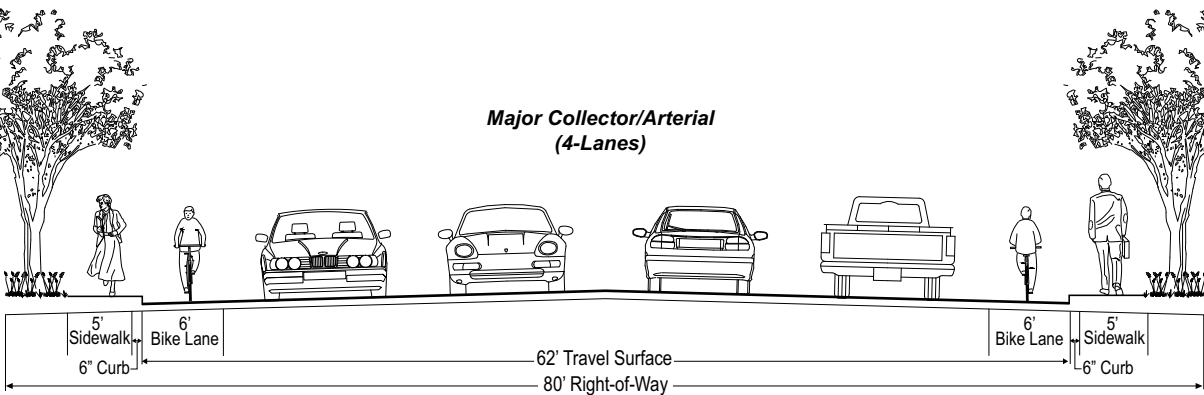
Minor Collector/Local Commercial/Local Industrial



Major Collector/Arterial (2-Lanes)



Major Collector/Arterial (4-Lanes)



Not to Scale

Figure 6-3
County Roads Typical Cross-Sections: Within City Urban Growth Boundary

Access Management

Access management along a roadway corridor incorporates planning, design, and implementation of land use and transportation policies and strategies that control the flow of traffic between the roadway and the surrounding land. Access management policies and strategies apply to driveways and other roadways and are designed to achieve a balance between the need to provide safe and efficient travel with the ability to access individual destinations.

Access management is an important tool for promoting safe and efficient travel for both local and long distance users along a roadway. Research has clearly shown a direct correlation between the number of access points and collision rates. Typically, as the number of access points increases, so do collision rates. Experience throughout the United States has also shown that a well-managed access plan for a street system can minimize local cost for transportation improvements needed to provide additional capacity and/or access improvements along unmanaged roadways. Therefore, it is essential that all levels of government maintain the efficiency of existing roadways through better access management. One objective of the Coos County TSP is to develop an access management policy that maintains and enhances the integrity (safety and capacity) of state highways and county roads in Coos County.

Access Management Techniques

Access management can be accomplished through a number of strategies and specific techniques that differ in large urban areas versus rural areas. Based on existing and forecast levels of traffic and development in Coos County, the most suitable access management strategy would appear to be management of the number of access points and their spacing. The following techniques describe how the number of access points to a road can be restricted or reduced:

- Restrictions on spacing between access points (driveways) and public/private roads based on the type of development and the speed along the road;
- Sharing of access points between adjacent properties;
- Providing driveway access via collector or local roadways where possible;
- Constructing frontage roads to separate local traffic from through-traffic;
- Offsetting driveways at proper distances to produce T-intersections that minimize the number of conflict points between traffic using the driveways and through traffic;
- Installing median barriers to control conflicts associated with left-turn movements (in or out of driveway or roadway); and
- Installing barriers to the property along the arterial to restrict access width to a minimum.

Access Management Requirements for State Highways

In Oregon, state laws and policies guide planning and management of the State Highway System, including access management of highway segments within both urban and rural areas.

Access management along all state highways in Oregon is regulated by an administrative rule specifically drafted to implement the access management policies adopted in the 1999 Oregon Highway Plan (OHP). The OHP specifies an access management classification system for state facilities and establishes standards and guidelines to be applied when making access management assignments for highways based upon their classification. Division 51 (OAR 734-051) is the leading document on access management on state highways.

As identified in Chapter 3 and summarized again in Table 6-3, Coos County has two Statewide highways, and four District highways. The state access spacing standards for each level of highway shall be applied.

Table 6-3. State Highways Classification

Number	Name	State Classification	State Freight Route	Federally Designated Truck Route	Scenic Byway	National Highway System
US 101 ⁵	Oregon Coast Highway	Statewide	Yes ¹	Yes	Yes	Yes
OR 42 ⁵	Coos Bay-Roseburg Highway	Statewide	Yes	Yes ²	No	Yes
OR 42S	Coquille-Bandon Highway	District	No	No	No	No
OR 241	Coos River Highway	District ³	No	No	No	Yes ³
OR 540	Cape Arago Highway	District	No	No	Yes ⁴	No
OR 542	Powers Highway	District	No	No	No	No

Notes:

1. US 101 is a freight route from the Coos-Douglas County Line at milepost 220.58 to the junction with OR 42 at milepost 244.27.
2. OR 42 is a federally designated truck route from US 101 at milepost 0.0 to the junction with OR 42S at milepost 10.85. The designation of through truck routes help provide for the efficient movement of goods while balancing and maintaining neighborhood livability, public safety, and minimizing maintenance costs of the roadway system.
3. OR 241 is a statewide highway at the junction with US 101 and is part of the National Highway System from US 101 at to the Bunker Hill Industrial Area access on Mullen Road.
4. OR 540 is a scenic byway from Shore Edge Drive at milepost 8.74 to the end of the highway at Cape Arago State Park.
5. The OHP classifies US 101 as an Expressway from 1st Street in Coos Bay (MP 239.89) to the junction with OR 42 (MP 244.27). The OHP classifies OR 42 as an Expressway from the junction with OR 42 (MP 0) to West Central Street in Coquille (MP 9.97) and then again from Filter Plant Road in Coquille (MP 13.19) to Ash Street in Myrtle Point (MP 20.53).

Source: 1999 Oregon Highway Plan, July 2006.

Access Management Requirements for County Roads

By law, Coos County has authority to prescribe access management standards. According to Oregon Revised Statute (ORS) 374.425, "In connection with the acquisition of real property for right-of-way for a throughway described in ORS 374.420, the county court or board of county commissioners may prescribe the location, width, nature and extent of any right of access that pertains to such real property." [Amended by 1965 c.364 s.2].

This plan includes access management standards that shall be implemented as new development occurs or as redevelopment occurs. Access standards shall be reviewed and applied during the County's development review process before building permits are issued. When developing access management standards to be applied to new development or redevelopment, the County shall address access spacing relative to existing driveways and

public roads based on the level of County road, access design, intersection and roadway sight distance, signing, illumination, and coordination of design with other utilities. Other factors may also be applied.

The access spacing standards for public street intersections on County roads is 500 feet, for both collectors and local roads. The access spacing standard for private access intersections on major and minor collector roads is 200 feet and on local roads is 50 feet. Where feasible, private accesses to major and minor collector roadways should be minimized or combined to increase access spacing and minimize conflict points.

Traffic Operations Standards

As identified in the Goals and Objectives section of this TSP, an overarching goal is to “... *strive to provide and encourage a transportation system that promotes safety and convenience for citizens and travelers and that strengthens the local and regional economy by facilitating the flow of goods and services.*” Traffic operations standards are one key way of maintaining desirable performance levels, which can vary for different facility types.

Two generally accepted performance measures can be used when evaluating traffic operations of roadways and intersections. One option is to calculate the volume-to-capacity (v/c) ratio while the other assigns a letter grade from A to F associated with a particular level of service (LOS). Both the LOS and v/c ratio concepts require consideration of factors that include traffic demand, capacity of the intersection or roadway, delay, frequency of interruptions in traffic flow, relative freedom for traffic maneuvers, driving comfort, convenience, and operating cost. Although v/c standards are applied for county and state facilities, level of service (LOS) is a widely recognized and accepted measure and descriptor of traffic operations and is therefore also used for evaluation.

Policy 1F of the OHP establishes mobility standards for state facilities and intersecting roadways. These standards are based on v/c ratio because the LOS represents a range of values and implementation of the standard can be problematic in some circumstances. Table 6 of the OHP outlines maximum v/c ratios for peak hour operating conditions by highway category and location (inside or outside UGBs), along with other designations specific to the state highway system. These standards were discussed in Chapter 4.

Oregon Highway Plan (OHP) mobility standards are applied for existing and future no build conditions (no/limited geometric changes) while Highway Design Manual (HDM) mobility standards are applied in conjunction with any design changes in future build projects along state facilities. HDM standards can be found in Table 10-1 of the most recent version of the manual. They are generally more restrictive than the OHP mobility standards. As with the OHP, HDM standards are specific to highway category and location (inside or outside UGBs), along with other designations specific to the state highway system.

The County employs v/c ratio as its primary method for measuring performance, with the LOS criteria serving as a secondary measurement. A maximum v/c ratio of 0.85 should be maintained for all County-maintained intersections during a typical weekday peak hour⁹.

The Coos County Zoning and Land Use Development Ordinance (Section 6.2.400.5) provides traffic impact analysis requirements. Traffic impact analyses, when required for proposed plan amendments, zone changes, or land developments, must demonstrate that the maximum v/c ratios will not be exceeded. For intersections where one or more approaches are maintained by another agency (city or ODOT), the more restrictive of the County's or other agency's standards should be applied. At signalized intersections, the standard should be applied to the overall intersection operation. At unsignalized intersections, the standard should be applied to the intersection's 'critical' or 'worst' movement. All analyses should follow the methodology outlined in the latest edition of the Highway Capacity Manual¹⁰.

Roadway Improvement Projects

The roadway improvement projects in this TSP were developed to address specific deficiencies, safety issues, or access concerns. These project lists are based upon available standards, warrants, perceived need, safety data, traffic operations, and community livability. Projects were not limited to roadway issues, although most projects are roadway-related.

Roadway improvement projects have been grouped into the following categories:

- Pavement Improvements
- Bridge Improvements
- Natural Hazard Mitigation Improvements
- Safety Improvements
- Other System Improvements

Tables summarizing the improvements on County and State facilities have been prepared for each category of improvement and the approximate location of the improvement is illustrated in related figures. Because projects are identified based on current and expected needs within the next 20 years, implementation is recommended based on the following priorities:

- High Priority (next 0 to 5 years)
- Medium Priority (5 to 10 years)
- Low Priority (10 to 20 years)

Estimated year 2010 project costs include design, construction, and contingency costs. They are preliminary estimates and do not include right-of-way acquisition, water or sewer facilities, or detailed intersection design.

⁹ The County operational standards were developed as part of this TSP update.

¹⁰ Highway Capacity Manual, Transportation Research Board, Washington DC

Pavement Improvements

County and state roadway segments have been identified for paving improvements based upon currently assessed conditions, functional classification, and route use. Table 6-4 summarizes the proposed improvements and recommended priorities for implementation and Figure 6-4 illustrates approximate locations.

Table 6-4. Proposed Roadway Surface Improvements

Project ID	County Road Name (Road ID)	Length/ Total Roadway (miles)	Existing ¹ Width (feet)	Proposed Width (feet)	Functional Classification	Cost ² (2010 \$)
Proposed Paved Roadway Segments to be Improved						
High Priority / Short Term (0-5 Years)						
R-1	Sitkum Lane (1C)	2.00 of 13.03	21	25	Major Collector	\$1,030,000
R-2	Beach Loop Road (29B)	0.75 of 2.63	24	28	Major Collector	\$440,000
R-3	Old Broadbent Road (20B)	1.75 of 5.10	21	25	Major Collector	\$910,000
R-4	Old Broadbent Road (20E)	0.50 of 5.10	20	24	Major Collector	\$300,000
R-5	North Bank Lane (5B)	1.50 of 4.30	20	24	Major Collector	\$910,000
Medium Priority / Mid Term (5-10 Years)						
R-6	Lampa Lane (4B)	1.50 of 12.40	23	27	Major Collector	\$850,000
R-7	Seven Devils Road (33A)	0.75 of 5.53	22	26	Major Collector	\$410,000
R-8	Seven Devils Road (33B)	1.25 of 6.34	24	28	Major Collector	\$720,000
R-9	Shelley Road (147B)	1.00 of 2.03	24	28	Major Collector	\$580,000
Proposed Gravel Roadway Segments to be Paved						
Medium Priority / Mid Term (5-10 Years)						
R-10	Sitkum Lane (1G)	10.45 of 10.45 (All)	18	22	Major Collector	\$7,970,000
R-11	Fairview-Sumner Lane (59G)	4.38 of 4.38 (All)	20	24	Major Collector	\$3,260,000
R-12	Gravelford Lane (24G)	3.76 of 3.76 (All)	24	28	Local	\$3,130,000
R-13	Lee Valley Road (2G)	3.46 of 3.46 (All)	24	28	Minor Collector	\$2,930,000
R-14	Seven Devils Road (33G)	3.48 of 3.48 (All)	20	24	Minor Collector	\$1,780,000
Low Priority / Long Term (10-15 Years)						
R-15	Old Broadbent Road (20G)	2.52 of 2.52 (All)	wa	24	Major Collector	\$1,800,000
R-16	Fairview Road (9G)	3.31 of 3.31 (All)	20	24	Minor Collector	\$2,550,000
R-17	North Lake Lane (186G)	2.72 of 2.72 (All)	18	22	Major Collector	\$1,300,000
R-18	Shutters Landing Lane (25G)	4.75 of 4.75 (All)	18	22	Minor Collector	\$2,270,000
R-19	Parkersburg Road (91G)	2.51 of 2.51 (All)	20	24	Major Collector	\$1,310,000
R-20	Catching Creek Lane (19G)	1.54 of 1.54 (All)	20	24	Minor Collector	\$1,120,000
R-21	McKinley Lane (13G)	6.47 of 6.47 (All)	20	24	Minor Collector	\$4,700,000
R-22	West Fork Millicoma Road (47G)	3.50 of 5.19	24	28	Minor Collector	\$2,060,000
R-23	East Fork Millicoma Road (49G)	2.75 of 2.75 (All)	20	24	Local	\$1,430,000

Notes:

1. Values may not match the average roadway width represented in Table 3-2. Value is based on the Pavement Condition Index (PCI) that represents the observed width for the specified segment(s).
2. Costs vary for segments with similar length and width due to varying pavement depth

Source: Coos County Pavement Condition Index, 2009 and Coos County Road Inventory

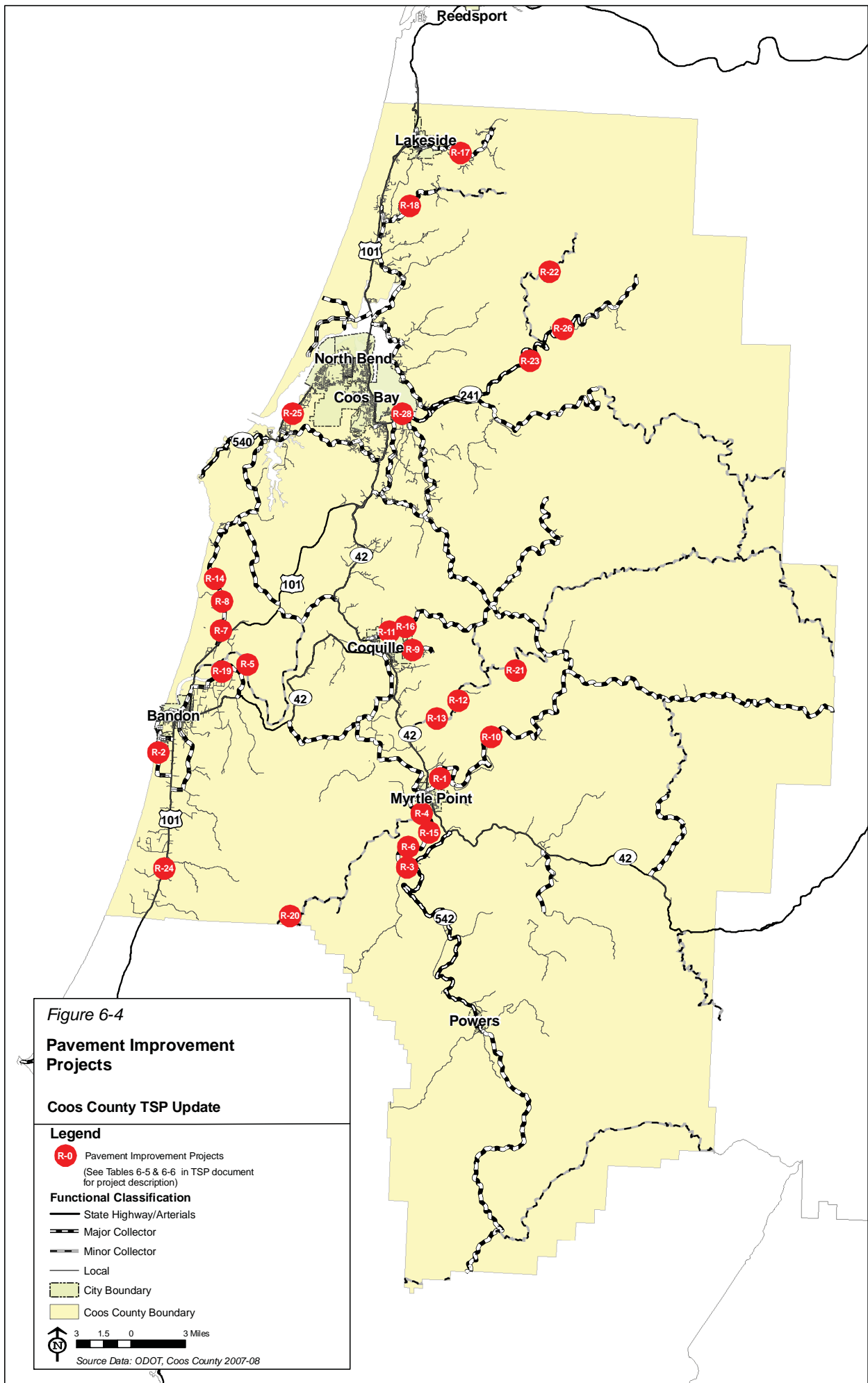


Figure 6-4

Pavement Improvement Projects

Coos County TSP Update

Legend

R-0 Pavement Improvement Projects
 (See Tables 6-5 & 6-6 in TSP document for project description)

Functional Classification

— State Highway/Arterials

— Major Collector

— Minor Collector

— Local

City Boundary

Coos County Boundary



Source Data: ODOT, Coos County 2007-08

The County's Pavement Condition Index (PCI) indicates that approximately 10 percent of the paved roadways in the Coos County system have Poor pavement conditions and another one percent has Very Poor conditions. Because it is not financially feasible to pave all substandard roadway segments, improvements will be focused on strategic and heavily used locations, specifically all major collector segments with Poor or Very Poor pavement conditions, as presented in Table 6-4. Detour routes, as identified by county and ODOT, will be a priority for paving improvements.

Coos County also has major and minor collector roadways that are still gravel surfaces. Table 6-4 also identifies proposed collector road segments that would be upgraded from gravel to pavement along with several key local road segments. Reconstruction to County design standards is not feasible for most of the existing roadways because of design and other constraints. A minimum paved width of 24 feet is recommended, but a minimum of 20 feet is acceptable for two-way traffic, depending on anticipated traffic volumes and functional classification. Cost opinions for paving roadways at their existing (or minimum) widths, plus 2-foot shoulders on either side, are included in Table 6-4. The proposed 4-foot widening serves as a realistic alternative to building each roadway to meet a uniform cross sectional standard; however, it is still likely that constraints along some segments will not allow for this increase in width. The proposed roadway segments have been rounded up to the nearest quarter mile to account for the County's standard paving practice.

Several segments of state highways have poor pavement ratings within Coos County. Although the County has no direct control over the state highways within its boundaries, the County plans to coordinate with ODOT to set priorities for improving these highway sections. Table 6-5 provides a list of proposed state highway segments to be improved, including cost opinions and Figure 6-4 illustrates approximate locations.

Table 6-5. State Highway Segments to be Improved

Project ID	State Highway		Milepoint		Length (miles)	Pavement Rating 2008	Cost (2010 \$)
			Begin	End			
High Priority / Short Term (0-5 Years)							
R-24	US 101	Two Mile Road - Laurel Grove	278.30	280.55	2.25	Poor	\$1,680,000
R-25	OR 540	Begin State Juris. - Sunset Bay S.P.	4.50	11.00	6.50	Poor	\$4,320,000
R-26	OR 241	Kruse Road - End Of Pavement	15.00	19.00	4.00	Poor	\$2,690,000
Medium Priority / Mid Term (5-10 Years)							
R-27	OR 542	Milepoint 8 Slide Section	8.00	8.75	0.75	Poor	\$1,680,000
R-28	OR 241	US-101 – 16 th Avenue	0.00	0.75	0.75	Poor	\$4,320,000

Source: ODOT, Pavement Services Unit, 2008 Pavement Condition Report

Issues regarding pavement conditions on OR 542 are assumed to be addressed with the Draft 2010-2013 STIP Project Number 13933 which addresses the Burma Slide area.

Bridge Improvements

Bridge improvements have been identified based upon four different factors: structural deficiency, functional obsolescence, sufficiency rating (definitions in Chapter 3), and safety.

Structural deficiency, functional obsolescence, and sufficiency ratings were established through the 2008 bridge inventory from ODOT's Bridge Maintenance Section. Generally, bridges with a sufficiency rating of 80 or less are eligible for rehabilitation, while bridges with a sufficiency of 50 or less are eligible for replacement.

In order to identify noteworthy safety concerns at bridge locations, crash data from the most recent five-year period available (January 1, 2003 to December 31, 2007) was evaluated.

County Bridges

Of the 111 bridges in Coos County, three are identified as structurally deficient and seven are identified as functionally obsolete. In addition to those bridges identified with deficiencies, 41 others are identified as not deficient but have sufficiency ratings that indicate they are eligible for replacement (3 bridges) or rehabilitation (38 bridges).

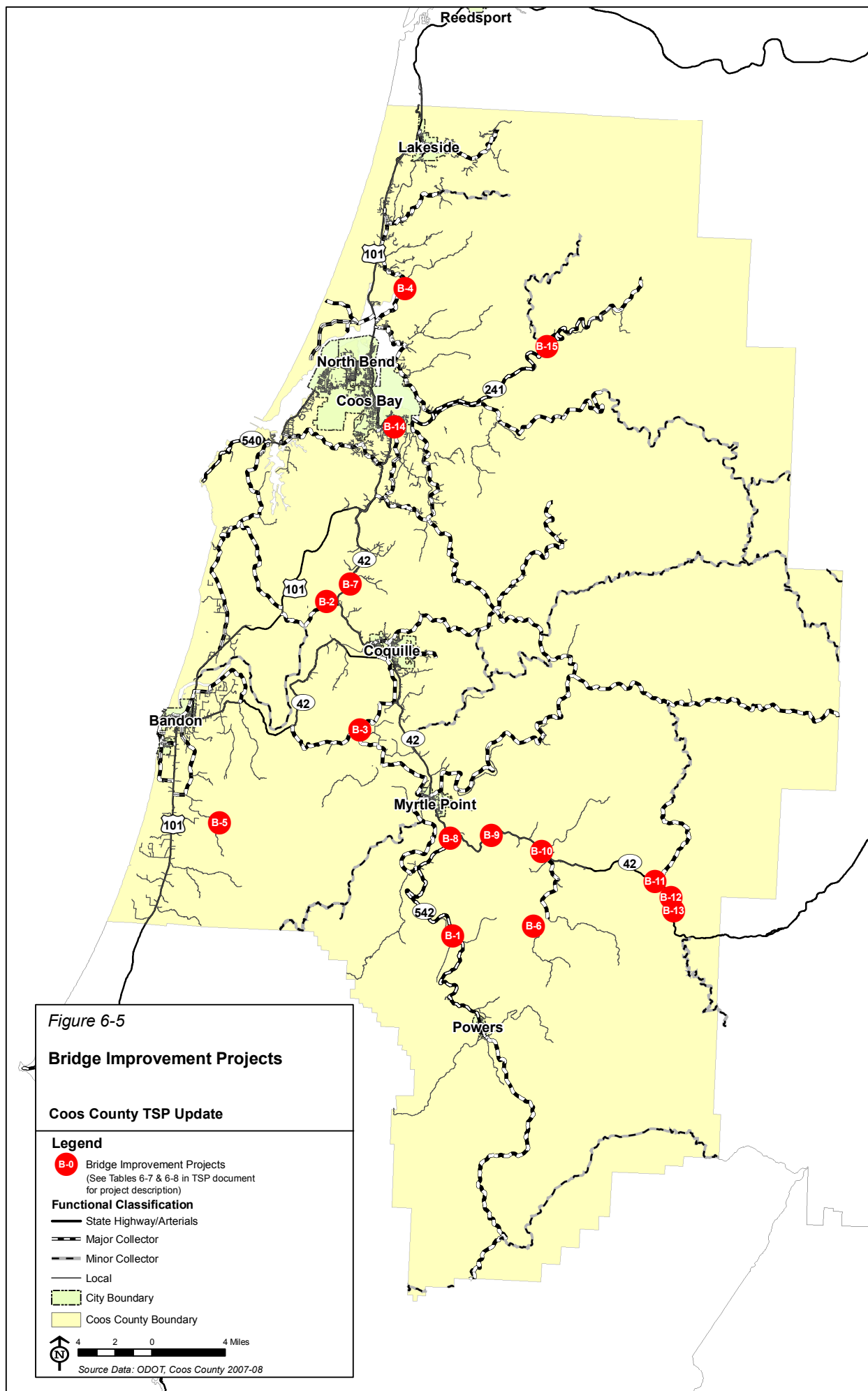
Two of the three structurally deficient bridges are currently in the draft 2010-2013 STIP for replacement. The County has applied for funding in the 2015 STIP for bridge #16349 on Gaylord Road. These bridges are summarized in Table 6-6 and Figure 6-5 illustrates approximate locations.

Table 6-6. County Bridges to be Rehabilitated or Replaced

Project ID	Bridge ID	Milepoint	Name – Deficiency	STIP Programming & Cost
High Priority / Short Term (0-5 Years)				
B-1	16349	0	South Fork Coquille River, County Road 153G (Gaylord Road) – Structurally Deficient	Apply for 2012-2015 STIP
B-2	08926	0.72	Beaver Creek, County Road 5A (North Bank Lane) – Structurally Deficient	STIP Project #16047 – Replacement Begin in 2013 - Cost \$6,088,000
B-3	15409	5.79	Fish Trap Creek, FAS A417 (Robison) – Structurally Deficient	STIP Project #16046 – Replacement Begin in 2013 - Cost \$817,000
B-4	11C112	2.75	Haynes Slough Bridge – Replace Tidegate and Bridge	Apply for funding – Approximate Cost \$1,500,000
Medium Priority / Mid Term (5-10 Years)				
B-5	11C13A	3.9	Two Mile Creek, County Road 11G (Two Mile Lane) – Functionally Obsolete	Apply for funding in future
B-6	11C43A	5.75	Myrtle Point, County Road 32 (Myrtle Creek Road) – Functionally Obsolete	Apply for funding in future

Sources: ODOT Bridge Maintenance Section, Draft 2010-2013 Statewide Transportation Improvement Program (STIP)

The functionally obsolete bridges are all too narrow and some have issues at the bridge approaches, but are rated structurally sufficient. The crash data analyzed to identify safety concerns does not show any crashes associated with these facilities. However, several of these



bridges are on roadways with a functional classification of Rural Major Collector. These bridges have been identified as projects to potentially pursue for STIP funding in the future.

State Bridges

Of the 56 state bridges in Coos County, 9 are identified as structurally deficient and 8 are identified as functionally obsolete. In addition to those bridges identified with deficiencies, 16 others are identified as not deficient but have sufficiency ratings that indicate they are eligible for replacement (1 bridge) or rehabilitation (15 bridges).

All but one of the structurally deficient bridges are currently in the draft 2010-2013 STIP for some kind of improvement. These bridges are summarized in Table 6-7 and Figure 6-5 illustrates approximate locations.

Table 6-7. State Bridges to be Rehabilitated or Replaced

Project ID	Bridge ID	Highway	Milepoint	Name	STIP Programming & Cost
High Priority / Short Term (0-5 Years)					
B-7	03173A	OR 42	5.37	Beaver Creek, OR 42 EB	STIP Project #14225 Repair Begin in 2010 - Cost \$13,032,000
B-8	08842	OR 42	23.37	Middle Fork Coquille River, OR 42 at MP 23.37	STIP Project #14225 Repair Begin in 2010 - Cost \$13,032,000
B-9	03212A	OR 42	26.72	Endicot Creek, OR 42	STIP Project #14225 Repair Begin in 2010 - Cost \$13,032,000
B-10	08935	OR 42	30.59	Middle Fork Coquille River, OR 42 at MP 30.59	STIP Project #14225 Repair Begin in 2010 - Cost \$13,032,000
B-11	00482B	OR 42	37.31	Sandy Creek, OR 42	STIP Project #14225 Repair Begin in 2010 - Cost \$13,032,000
B-12	09185	OR 42	40.56	Middle Fork Coquille River, OR 42 at MP 40.56	STIP Project #14225 Repair Begin in 2010 - Cost \$13,032,000
B-13	09186	OR 42	40.77	Middle Fork Coquille River, OR 42 at MP 40.77	STIP Project #14225 Repair Begin in 2010 - Cost \$13,032,000
B-14	01132F	OR 241	0.42	Isthmus Slough, OR 241 (Eastside)	STIP Project #15846 East Approach Begin in 2010 - Cost \$7,163,000
Medium Priority / Mid Term (5-10 Years)					
B-15	01492A	OR 241	14.07	West Fork Millicoma River, OR 241	Apply for funding in future

Sources: ODOT Bridge Maintenance Section, Draft 2010-2013 Statewide Transportation Improvement Program (STIP)

The Isthmus Slough Bridge (#01132F) has a project planned to address the most severe issues at the east end of the bridge but the bridge will remain structurally deficient. The existing bridge will remain until funding can be identified for a future repair or replacement project.

The West Fork Millicoma River Bridge (#01492A) is identified as structurally deficient but there are currently no projects to address the deficiency. This bridge is located approximately 14 miles from US 101, carries approximately 600 vehicles per day, and currently has no weight restrictions. Structural deficiency should be addressed eventually when funding is available.

Natural Hazard Mitigation Improvements

Natural hazards, such as landslides, are responsible for damage to roads and bridges around Coos County each year. While it is not possible to mitigate all slide or other natural hazard areas because of both limited funding and ongoing vulnerability, some locations have been identified for improvements. The *Coos County Natural Hazards Mitigation Plan* includes a list of mitigation on county roads along with estimated costs for the mitigation. This information, along with additional projects identified by Coos County is summarized in Table 6-8 and Figure 6-6 illustrates approximate locations. These mitigation measures typically involve grading slides and improving drainage systems to divert water.

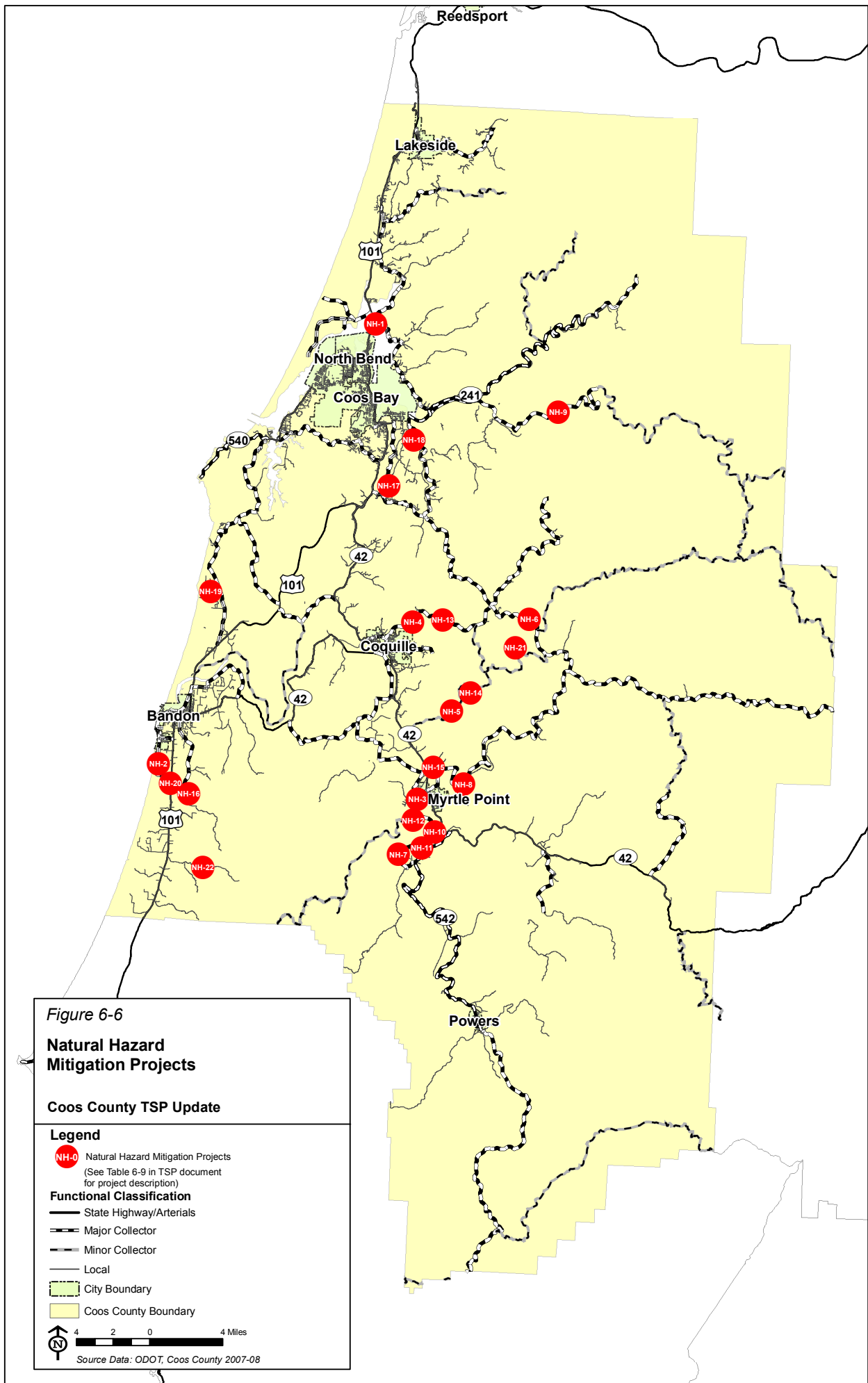
Table 6-8. Natural Hazards Mitigation

Project ID	Hazard	County Road Name (Road ID)	Milepoint	Functional Classification	Estimated Cost (2010 \$)
High Priority / Short Term (0-5 Years)					
NH-1	Slide	East Bay Road (45)	NA	Major Collector	\$7,500,000 ¹
NH-2	Flooding	Beach Loop Road	1.5-1.8	Major Collector ⁴	\$2,600,000 ²
NH-3	Slide	Reedsford Road (81)	0.5	Local	\$350,000 ²
Medium Priority / Mid Term (5-10 Years)					
NH-4	Slide	Fairview Road (9A)	NA	Major Collector	\$60,000 - \$70,000 ¹
NH-5	Slide	Lee Valley Road (2A)	NA	Major Collector	\$50,000 ¹
NH-6	Slide	Lone Pine Lane (60B)	NA	Major Collector	\$50,000 ¹
NH-7	Slide	Lampa Lane (4C)	NA	Major Collector	\$25,000 ¹
NH-8	Slide	Sitkum Lane (1B)	NA	Major Collector	\$50,000 - \$75,000 ¹
NH-9	Slide	South Coos River Lane (6A)	NA	Major Collector	\$10,000 ¹
NH-10	Slide	Old Broadbent Road (20A)	0.5, 1.4, 1.5, 1.7	Major Collector	\$500,000 ²
NH-11	Slide	Old Broadbent Road (20G)	3.2	Major Collector	\$8,000 ²
NH-12	Slide	Lampa Lane (4A)	1.4	Major Collector	\$180,000 ²
NH-13	Slide	Fairview Road (9G)	NA	Minor Collector	\$100,000 ¹
Low Priority / Long Term (10-20 Years)					
NH-14	Slide	Sumerlin Road (195G)	NA	Local	\$25,000 ¹
NH-15	Slide	North Fork Road (12)	NA	Local	\$100,000 ¹
NH-16	Slide	Two Mile Lane (11)	NA	Local	\$25,000 ¹
NH-17	Slide	Ross Inlet Road (18)	NA	Local	\$50,000 ¹
NH-18	Slide	West Catching Road (205)	NA	Local	\$5,000 ¹
NH-19	Slide	Whiskey Run Lane (217)	NA	Local	\$25,000 ¹
NH-20	Slide	Two Mile Lane (11B)	1.5	Local	\$60,000 ²
NH-21	Erosion	McKinley Lane (13G)	3.4	Local	\$40,000 ²
NH-22	Slide	Upper Four Mile Lane (98G)	4.1	Local	\$75,000 ²

Notes:

1. Project identified in Natural Hazards Mitigation Plan. East Bay Road project cost has been modified based on engineering studies performed since the plan was prepared.
2. Project identified by Coos County Roads Department.

Source: Coos County Road Department and 2005 Coos County Natural Hazards Mitigation Plan



Coos County has had engineering studies completed on East Bay Drive, which is the highest priority roadway since it serves as a detour route for the McCullough Bridge. The study identified three locations with improvement costs totaling \$7.5 million. White's curve is the number one issue.

The *Coos County Natural Hazards Mitigation Plan* identifies two short term action items that should be considered as recommendations in this TSP:

- Landslide Short Term Action Item #1: Identify and map high risk slide areas to create an accurate logistical assessment.
- Landslide Short Term Action Item #2: Evaluate current and high hazard slides for prioritization and explore mitigation possibilities. The Plan lists eight specific slide corridors for conducting engineering studies: Beach Loop Road, Coos River Highway, Ocean Boulevard, Bald Hill, North Fork Road, US 101, Lampa Mountain Road, OR 42 to Powers

Safety Improvements

Improving safety throughout the Coos County roadway network has been identified as a priority, and is consistent with the goals identified in Chapter 2 of this TSP. A roadway characteristics audit¹¹ was performed in conjunction with a detailed crash history analysis¹² to identify potential improvement locations. While some projects are targeted at fatal and serious injury crash locations, some projects were identified due to roadway attributes and environmental factors that may contribute to future crashes.

Table 6-9 lists potential safety improvement projects that have been identified for state highways along with cost opinions for each project. Figure 6-7 illustrates approximate locations for the improvements. Priorities were established based on the frequency of crashes and state priority indexing. Prior to implementation, each improvement should be evaluated with respect to their corresponding State warrant.

Table 6-9. Roadway Safety Projects – State Highways

Project ID	Highway Name	Location (Milepoint)	Potential Mitigation Measures	Estimated Cost (2010 \$)
High Priority / Short Term (0-5 Years)				
S-1	US 101	Tugman State Park and City of Lakeside	Speed Zone, left-turn lane, right-turn deceleration lanes, access management	\$250,000
S-2	US 101	Wildwood/Crannog Road (MP 227.0 – 227.2)	Advance signage and turn lanes	\$75,000
S-3	US 101	N. of Bullards Beach State Park & North Bank Lane (MP 259.0)	Advance signage for intersection, signage warning of curve, and chevrons	\$5,000
S-4	OR 42	Near Davis Slough Bridge (MP 1.0)	Delineation, shoulder improvements, guardrail	\$50,000
S-5	OR 42	Alder Hill Lane to Old City-County Road (MP 6.7 – 8.3)	Evaluate effectiveness of spot improvements for this segment	\$15,000

¹¹ The roadway characteristics audit was performed using aerial imagery and ODOT Video Log.

¹² The crash data used in this safety investigation was from the most recent five-year period available (January 1, 2003 to December 31, 2007).

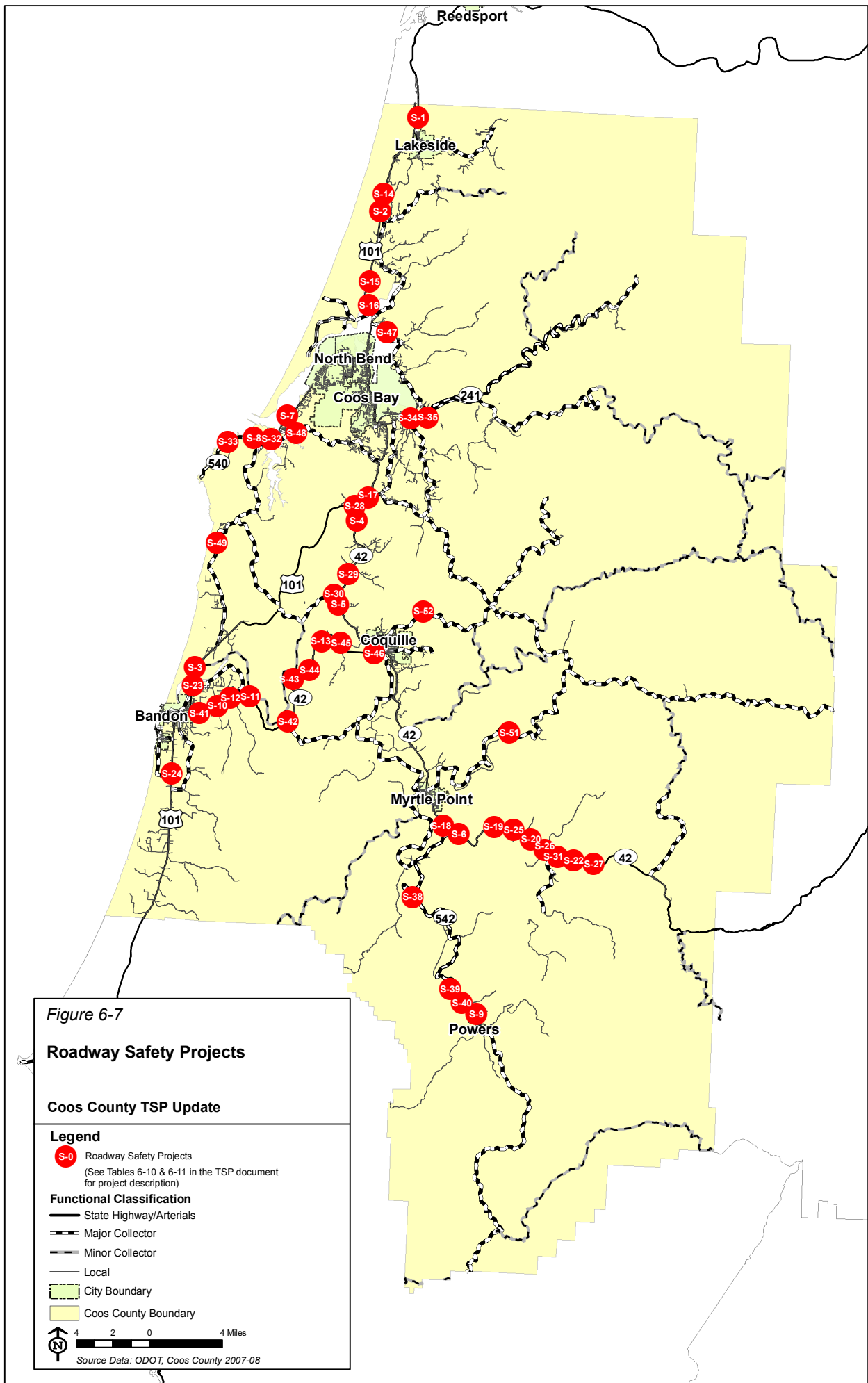


Table 6-9. Roadway Safety Projects – State Highways

Project ID	Highway Name	Location (Milepoint)	Potential Mitigation Measures	Estimated Cost (2010 \$)
S-6	OR 42	Segments east and west of OR 542 Junction (MP 23.0 – 24.5)	Evaluate effectiveness of spot improvements for this segment	\$5,000
S-7	OR 540	Barview and North (MP 5.0 - 7.0)	Access management plan	TBD
S-8	OR 540	Coos Head Road to Oceanview Road (MP 9.24 - 10.08)	Clear roadside to improve sight distance	\$10,000
S-9	OR 542	Woodward Creek Road to City Limits (MP 17.0 - 17.4)	Delineation, chevrons	\$5,000
S-10	OR 42S	Curve (turn) east of Prosper Junction Road (MP 2.17)	Delineation, improve retro-reflectivity of arrow sign or replace with chevrons	\$5,000
S-11	OR 42S	Isolated curve east of Bear Creek/Parkersburg Road (MP 3.43)	Advance signage, chevrons	\$5,000
S-12	OR 42S	Reverse curves west of Bear Creek/Parkersburg Road (MP 2.38)	Clear roadside to improve signage visibility	\$5,000
S-13	OR 42S	Harlocker Hill Road (MP 13.18)	Advance intersection signage	\$7,500
Medium Priority / Mid Term (5-10 Years)				
S-14	US 101	Beaver Loop Road (MP 226.42)	Advance signage and right-turn lane extension	\$50,000
S-15	US 101	South of Kadora Lane & North Bay Road (MP 231.0 – 231.2)	Roadway delineation	\$5,000
S-16	US 101	US 101 Wayside (MP 231.8 -232.3)	Advance signage and right-turn deceleration lanes	\$50,000
S-17	US 101	OR 42 Junction (MP 244.0 – 244.5)	Roadway delineation, illumination, reduced speeds	\$10,000
S-18	OR 42	Guerin Lane (MP 23.28)	Clear roadside to improve sight distance	\$5,000
S-20	OR 42	Myrtle Creek Road west of Bridge (MP 30.50)	Add eastbound deceleration lane	\$225,000
S-21	OR 542	1 mile east of Robbins Creek Bridge (MP 4.5 – 5.0)	Safety edge, guardrail, shoulder improvement	\$50,000
S-22	OR 42	Small Creek curve east of Bridge	Realign curves; complete apart from passing lanes if latter is not build within planning horizon	\$2,000,000
Low Priority / Long Term (10-20 Years)				
S-23	US 101	Prosper Jct. Road (MP 260.13)	Northbound right-turn deceleration lane	\$50,000
S-24	US 101	Beach Loop Road (MP 277.58)	Southbound right-turn deceleration lane	\$100,000 - \$250,000
S-25	OR 42	McMullen Creek Road (MP 28.59)	Westbound left-turn bay and eastbound shoulder striped as right-turn deceleration lane	\$5,000
S-26	OR 42	Myrtle Creek Road (MP 30.5)	Extend eastbound right-turn deceleration lane and advance signage	\$100,000
S-27	OR 42	Sharp Reverse Curves (MP 32.0)	Advisory speed signage and chevrons for both curves in both directions	\$5,000
S-28	OR 42	Wall Gulch to Coos County Speedway (MP 0.99 to 2.31)	Realign horizontal curve and decrease grade separation at Wall Gulch; remove overhead utilities from clear zone and reduce grade separation	\$3,800,000
S-29	OR 42	Beaver Creek/Overland Road accesses (MP 4.81 – 5.20)	Close Overland Road access at MP 4.81 and leg to Overland Road at MP 4.99; realign south Beaver Creek Road access at MP 5.15	\$265,000
S-30	OR 42	North Bank Road Intersection (MP 6.65 – 6.76)	Improve sight distances for westbound lanes and widen shoulders	\$450,000
S-31	OR 42	Bridge Intersection (MP 30.69)	Construct left-turn pockets	\$300,000
S-32	OR 540	Charleston - South Slough to Roosevelt Blvd. (MP 8.3 - 8.6)	Access management plan	TBD
S-33	OR 540	Sunset Bay State Park State Wayside (MP 11.2)	Delineation, chevrons	\$10,000

Table 6-9. Roadway Safety Projects – State Highways

Project ID	Highway Name	Location (Milepoint)	Potential Mitigation Measures	Estimated Cost (2010 \$)
S-34	OR 241	Catching Slough Road (MP 2.33)	Advance signage	\$5,000
S-35	OR 241	S. Coos River Lane (MP 3.52)	Advance signage	\$5,000
S-36	OR 241	E. Bay Drive (MP 3.89)	Advance signage	\$5,000
S-37	OR 542	Curve at Parsonage Lane (MP 2.4)	Advance signage for intersection, curve warning	\$5,000
S-38	OR 542	Curves at MP 6.1 - 6.2	Delineation, advance signage, guardrail	\$30,000
S-39	OR 542	Baker Creek Lane (MP 15.5)	Advance signage ("T intersection ahead")	\$5,000
S-40	OR 542	Curves east of Baker Creek Lane at (MP 16.15 - 16.5)	Guardrail	\$25,000
S-41	OR 42S	Prosper Jct. Road/Morrison Road (MP 1.59)	Advance signage and right-turn deceleration lane	\$65,000
S-42	OR 42S	Lampa Lane (MP 7.25)	Eastbound right-turn deceleration lane and westbound left-turn bay	\$60,000
S-43	OR 42S	Curve (MP 10.45)	Relocate or improve advisory curve signage, consider signing as reverse curve	\$5,000
S-44	OR 42S	Riverton Road (MP 10.8)	Advance intersection signage	\$7,500
S-45	OR 42S	Fat Elk Road (MP 14.65)	Advance intersection signage, eastbound right-turn deceleration lane	\$60,000
S-46	OR 42S	Fishtrap Road (MP 16.60)	Advance intersection signage, westbound right-turn deceleration lane	\$75,000 - \$100,000

Corridor-level assessments (safety audits) are proposed along the high crash county roadways listed in Table 6-10. At a minimum, assessments for county roads should address safety concerns regarding:

1. Lane departures occurring at sharp horizontal curves, which may be mitigated by improving delineation (striping, rumble, markers, etc.) and advisory signage (including replacing existing signage to increase retroreflectivity or improve placement)
2. Roadway segments/intersections with deficient sight distance, which may be mitigated by clearing brush, trees, and other obstacles.

The costs shown below include a corridor safety assessment and essential improvements. Conducting safety assessments should be a high priority although recommended improvements may be implemented over a greater period of time.

Table 6-10. County Road Safety

Project ID	County Road (ID)	Potential Mitigation Measures	Cost (2010 \$)*
High Priority / Short Term (0-5 Years)			
S-47	East Bay Drive (45)	<i>Improvements likely to be identified include: delineation, advance signage, reduced speeds, safety edges, guardrail, and improved shoulders, but other safety measure may also be identified.</i>	\$250,000
S-48	Libby Lane (184)		\$100,000
S-49	Seven Devils Road (33)		\$150,000
S-50	Beaver Hill Lane (208)		\$75,000
S-51	Sitkum Lane (1)		\$250,000
S-52	Fairview Road (9)		\$150,000

*Approximate cost for safety assessment and delineation-level improvements. Significant improvements such as shoulder widening or curve straightening would require additional funding.

Other System Improvements

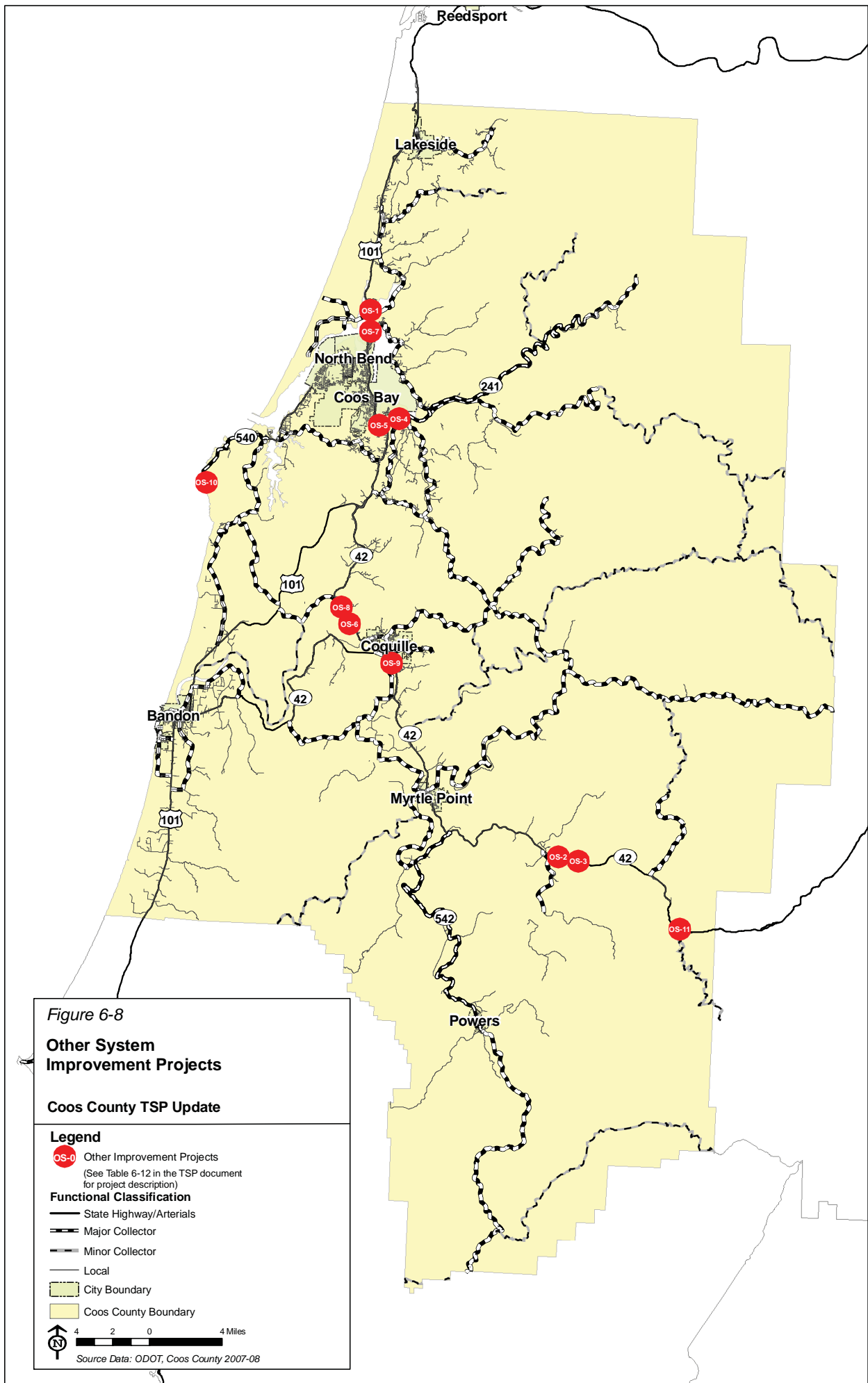
Additional projects that involve either capacity or connectivity are listed in Table 6-11 and approximate locations are illustrated in Figure 6-8. These projects have been identified in other plans (Corridor Plans and City TSPs) or through the public involvement process.

Table 6-11. Other System Improvements

Project ID	Location	Description	Estimated Cost (2010 \$)
High Priority / Short Term (0-5 Years)			
OS-1	TransPacific/US 101 (MP 232.8) ¹	A traffic signal at the intersection of Transpacific and US 101 is planned to be used on a temporary basis during construction of a nearby Liquefied Natural Gas facility. The County is considering the need for this traffic signal to become permanent. Consideration for a traffic signal installation must comply with OAR 734.020.460.	\$250,000
OS-2	OR 42 Passing Lanes (~MP 29 – 33) ²	Construct eastbound and westbound passing lanes on OR 42 somewhere between MP 29 and MP 33 (<i>identified as high priority in OR 42 Corridor Plan</i>)	\$4,200,000
OS-3	East of Bridge Passing Lanes (MP 31.20-32.80) ²	Add westbound and eastbound passing lanes; straighten curves at MP 32.10 (<i>addressed in TM6 under Other System Improvements</i>)	\$4,400,000
Medium Priority / Mid Term (5-10 Years)			
OS-4	Coos River Highway (OR 241) at Olive Barber Road ³	Install traffic signal with advance signal head and eliminate southbound to westbound “slip” lane ¹	\$750,000
OS-5	US 101 at Bunker Hill/Coos River Highway (OR 241) ³	Incorporate ODOT recommendations when available ¹	TBD
OS-6	Cedar Point Passing Lane (MP 8.25 –9.10) ²	Extend existing westbound passing lane to the west; implement if Chrome Plant section not widened to 4 lanes with 15-20 years	\$750,000
OS-7	US 101 at East Bay Drive ⁵	Install southbound left-turn lane	\$500,000
Low Priority / Long Term (10-20 Years)			
OS-8	Chrome Plant to Cedar Point (MP 7.25 –9.92) ²	Widen highway to 4 lanes with left-turn refuges; provide adequate shoulders	\$18,000,000
OS-9	OR 42/S. Adams (MP 12.25) ⁴	Construct left-turn bay	\$600,000
Beyond 20 Year Planning Horizon			
OS-10	Scenic Byway from Cape Arago Highway to Beaver Hill Road ⁵	Construct a new roadway connection between Cape Arago Highway and Beaver Hill Road with a scenic overlook on the north side of Big Devil Gulch	TBD
OS-11	OR 42 Curves east of Upper Rock Creek Road (MP 41.00 – 43.85) ⁶	Realign curve and widen roadway to address accidents and geologic hazards	TBD

Notes:

1. Project identified by Coos County.
2. Project identified in the OR 42 Corridor Plan.
3. Project identified in the Coos Bay Transportation System Plan
4. Project identified in the Coquille Transportation System Plan
5. Project identified through public or advisory meeting input.
6. Project identified in OR 42 Corridor Plan



Pedestrian and Bicycle Plan

The pedestrian and bicycle system plan addresses facility needs within Coos County along state highways and county roads. Currently, there is no extensive network of specifically designated bicycle routes serving Coos County other than the Oregon Coast Bike Route (OCBR). In rural areas, the shared roadway is the primary facility for bicycle (and pedestrian) travel.

Roads should include shoulders where bicycle use is high and motor vehicle speeds and volumes are also high. The Oregon Bicycle and Pedestrian Plan¹³ recommends shoulders that are 6 feet wide for bicycle use, although a minimum 4-foot shoulder is considered adequate when there are physical width limitations. Wider shoulders allow a cyclist to ride far enough from the edge of pavement to avoid debris and far enough from passing vehicles to avoid conflicts. When feasible, paved shoulders should be widened to a minimum width of 4 feet (as recommended in the design standards, Table 6-1) during rehabilitation projects.

Table 6-12 summarizes recommended bicycle improvements on County roads that improve or augment the OCBR and approximate locations are illustrated in Figure 6-9. This project list also includes one sidewalk improvement within the Coquille city limits.

Table 6-12. Bicycle and Pedestrian Improvements

Project ID	Location	Description	Estimated Cost (2010 \$)
High Priority / Short Term (0-5 Years)			
BP-1	Seven Devils Road south of Cape Arago Highway and north of US 101	Create 'gateway' and/or innovative signage to inform motorists of shared roadway	\$50,000
BP-2	North 8th Street and Airport Way through Lakeside	Add a southbound bike lane through Lakeside, with a rest stop at the County Park. The lane would be a 6-foot paved shoulder.	\$600,000
BP-3	Coos Head area	Conduct a study and develop a cooperative multimodal management plan	\$250,000
Medium Priority / Mid Term (5-10 Years)			
BP-4	West Central Drive in Coquille, from Ivy to OR 42	Add a sidewalk on the south side of the street to extend current improvements from the high school.	\$300,000
BP-5	Seven Devils Road/West Beaver Hill Road/Whiskey Run Road/ Seven Devils Road	Widen roadway to provide 4- to 6-foot shoulders on both sides of approximately 15 miles of roadway (where feasible)	\$7,700,000
BP-6	Riverside Drive from US 101 to Fillmore Avenue (1.3 miles)	Widen roadway to provide 4- to 5-foot shoulders on both sides of the road (where feasible)	\$825,000 - \$935,000
BP-7	Beach Loop Road from Polaris Lane to US 101 (2.3 miles)	Widen roadway to provide bike lanes, <u>OR</u> Provide multi-use trail along one side of the roadway	\$1,400,000 - \$1,700,000
BP-8	Seven Devils Road from West Beaver Hill Road to US 101	Following planned paving (R-14), add signage for a shared-lane bike route along Seven Devils (as an alternative to the adjacent OCBR section)	\$15,000

Note: Beach Loop Road project will need to be consistent with efforts in City of Bandon

¹³ Draft Oregon Bicycle and Pedestrian Plan, <http://www.oregon.gov/ODOT/HWY/BIKEPED/planproc.shtml>.

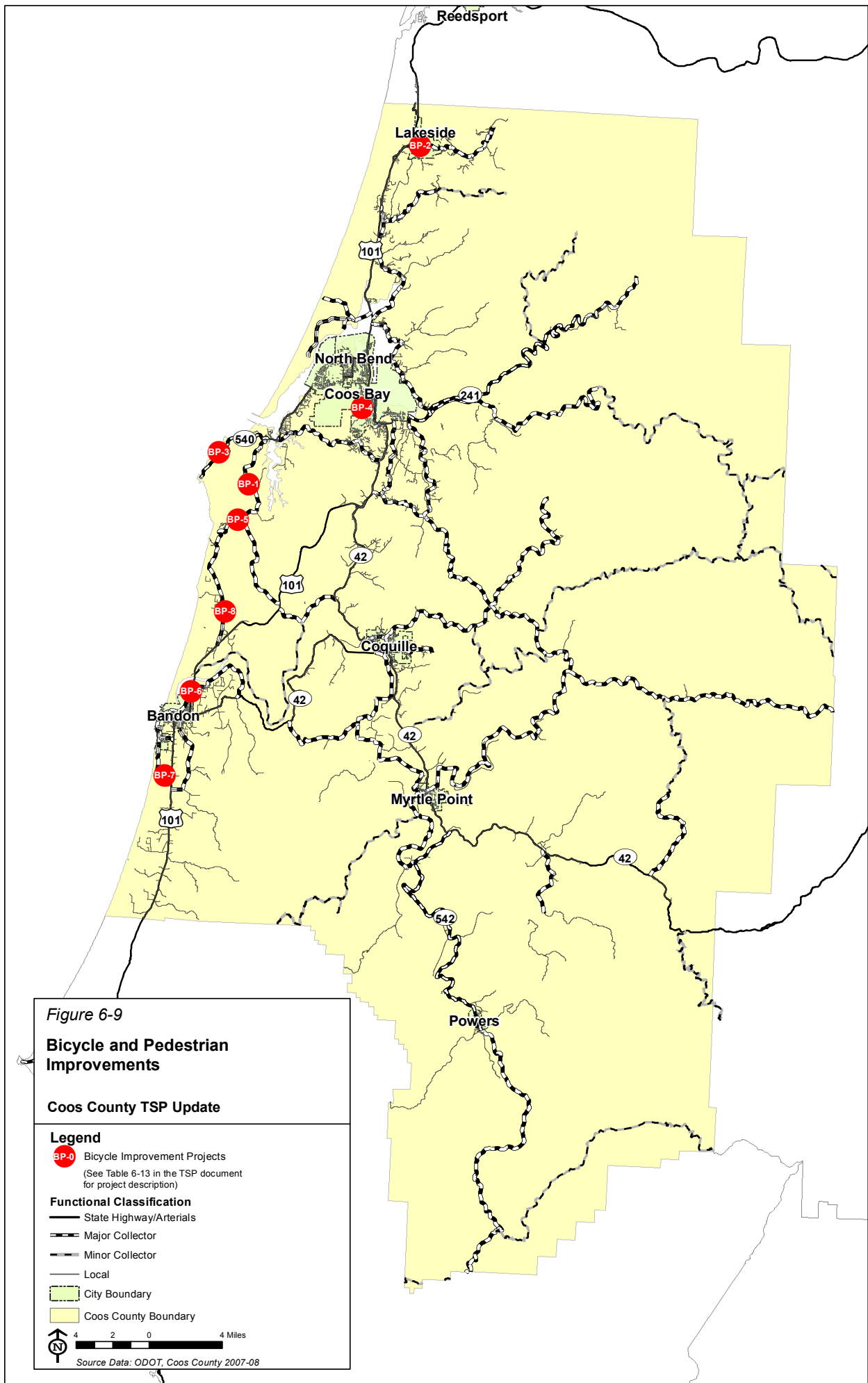


Figure 6-9
Bicycle and Pedestrian Improvements
Coos County TSP Update

Legend

- BP-0 Bicycle Improvement Projects
 (See Table 6-13 in the TSP document for project description)
- Functional Classification**
- State Highway/Arterials
- - - Major Collector
- · · Minor Collector
- Local
- City Boundary
- Coos County Boundary

4 2 0 4 Miles

Source Data: ODOT, Coos County 2007-08

Public Transportation Plan

A 2007 study, summarized in the *Coos County Coordinated Transportation Plan*, identifies specific needs within the County over the next 20 years. Recommendations have been put forward as ways of filling identified service gaps, which are designed to enhance the overall mobility of county residents, and especially to improve freedom of movement and quality of life for many transit dependent people, and to assure transportation access to jobs, health care and other basic services. Many of the suggestions for service improvements focus on Coos County Area Transit, which is understandable since CCAT is the public transit provider in the county. The recommendations are summarized in Table 6-13.

Table 6-13. Public Transportation Improvements

Project ID	Description	Estimated Cost (2010 \$)
PT- 1	Expand operations to include evenings and weekend service as resources become available.	TBD
PT- 2	Provide more frequent bus service on existing routes.	TBD
PT- 3	Restore Coastal Express service to at least five days a week – and possibly more – and consider extending service to Reedsport and Florence.	TBD
PT- 4	Extend public transportation services to outlying areas of the county. This may include regularly scheduled, deviated or flexible bus routes, feeder services, shopping or medical shuttles, and limited dial-a-ride services in currently unserved communities.	TBD
PT- 5	Restore South Coast Connector service connecting Bay area with Coquille, Bandon and Myrtle Point.	TBD
PT- 6	Reestablish regularly scheduled bus connections between Charleston and Coos Bay/North Bend.	TBD
PT- 7	Offer discounted fares or other strategies to address the cost of public transportation for low income riders. Establish out of county connections, both to adjacent counties and to distant medical treatment destinations.	TBD
PT- 8	Negotiate service agreements with SW Oregon Community College for enhanced student transportation services.	TBD
PT- 9	Preserve the existing dial-a-ride services available to older adults and people with disabilities.	TBD
PT- 10	Expand hours of paratransit service to include evenings and weekends.	TBD
PT- 11	Provide higher level of paratransit services to those with special needs.	TBD
PT- 12	Develop volunteer driver training and recruitment program (Maintaining a well trained and enthusiastic countywide pool of volunteer drivers can be a cost effective way of responding to transportation needs, including out of town medical trips.)	TBD

Source: *Coos County Coordinated Transportation Plan, 2007*

Rail Plan

The Coos Bay Branch of the railroad, currently owned by the International Port of Coos Bay, runs from Eugene to Coos Bay. The Federal Railroad Administration (FairA) classifies the Coos Bay Branch as Class 1 and 2 track (maintenance standards requiring maximum speeds of 10 or 25 mph), with Exception status (exemption from maintenance standards) between Coos Bay and Coquille. The Coos Bay Branch provides connections between Eugene and coastal communities including Reedsport, Coos Bay and Coquille. The Coos Bay Branch is not subject to weight or dimensional standards.

In September 2007, the previous owner of the railroad, Central Oregon and Pacific Railroad (CORP), shut down operations of the Coos Bay Branch line. The International Port of Coos Bay was authorized by federal ruling to purchase the Coos Bay Branch line from CORP and apply for a Railroad Rehabilitation and Improvement Financing loan from the Federal Railroad Administration to be used as a line of credit.

A railroad rehabilitation project has been awarded funding through the *Connect Oregon III* program (8/25/2010 Award List).

Airport Plan

In addition to the four public airports, there are six privately-owned airfields/airstrips and two private helipads operating in Coos County (see Chapter 3). Conversations with County and City staff suggest that no future access and roadway needs have been identified for these facilities. As such, no specific plan is being proposed at this time.

Pipeline Plan

Coos County currently has its own natural gas pipeline operated by NW Natural Gas. In addition to the existing pipeline, the Pacific Connector project would construct a 230-mile pipeline from the proposed Jordan Cove liquefied natural gas import terminal located on the north spit in the Port of Coos Bay to the Pacific Gas and Electric Company's gas transmission system, Tuscarora Gas Transmission's system and Gas Transmission Northwest's system, all located near Malin, Oregon, southwest of Klamath Falls. In addition, the project would interconnect to Williams' Northwest Pipeline near Myrtle Creek and Avista Corporation's distribution system near Shady Cove.

Water Plan

The Port of Coos Bay is the primary center of maritime commerce for Oregon's South Coast and is home to Oregon's largest coastal deep-draft harbor. An average of 2.5 million tons of cargo moves through the Port of Coos Bay each year. Inbound and outbound cargo is moved through Coos Bay's 15-mile channel, which features six marine terminals, seven deep-draft berths and several barge facilities.

There is currently an ongoing study to assess the feasibility of modifying sections of the Coos Bay Channel to accommodate larger vessel traffic. These proposed channel modifications

included widening and deepening sections from the entrance at the Pacific Ocean to the railroad bridge located at approximately river mile 9.2, and adding a turning basin for vessel maneuvering. Ecosystem restoration in the vicinity of Coos Bay, maintenance dredging of the channel and inlet, and possible modifications to the jetties would also be part of the proposed work.

The Port of Bandon has completed 3 phases of their River Walk project plan. A 25,000 square foot boardwalk with glass enclosed picnic shelter, 100 seat outdoor amphitheater, and a meandering sidewalk which includes engraved bricks purchased by the public. Rebuilding the marina for today's mariners is the next phase. In 2010 through a grant from the Oregon State Marine Board, the marina is being outfitted with the latest equipment for vessel sewage pump out and dump station. Environmentally sound disposal of waste is a top priority for the port.

The Port of Bandon is researching methods fund the construction of a wildlife viewing platform adjacent to the port-owned Redmon Pond on the South Jetty. This platform will allow wildlife enthusiasts to view the pond and migratory birds that frequent there. The platform will also offer views of a favorite gathering spot for Pelicans on the Coquille River and a clear and fabulous view of the Bandon Lighthouse and Coquille River bar. Gorse abatement is on-going on this property and in partnership with BLM, native grasses and native plants are being introduced as part of the abatement program.

The Port of Coquille, positioned on the Coquille River, is planning on continuing to provide recreational activities, such as fishing and boating.

7. TRANSPORTATION FINANCING

Although a financing plan is not required by the TPR (OAR 660-12-040), developing an understanding of how projected funding needs compare with available revenues is important. This chapter summarizes existing Coos County transportation budgets followed by an analysis of needs versus revenues. Potential funding sources available from the federal, state and local levels of government are then discussed along with the appropriateness of the available sources to fund projects. This is followed by a brief funding strategy that summarizes potential future funding sources for County TSP projects.

Existing Budgets

Coos County currently owns and maintains approximately 350 miles of paved roads, 200 miles of unpaved (gravel) roads, and 124 bridges located throughout the County. The County Road Department has responsibility for the maintenance, repair, and new construction of the County's road and bridge system. The services provided by the Road Department are funded by an allocation of federal, state, and local revenue sources that are managed through annual fiscal year budgets approved by the Board of Commissioners.

Table 7-1 shows the County road revenues for fiscal years 2008 through 2011. Historically, the major sources of road and bridge revenues have been from the federal forest timber receipts, the allocation of state fuel taxes, and through a variety of local sources. The federal forest timber receipts funding will end in 2012, which will require Coos County to rely more on available state and local revenue sources.

Table 7-1. Coos County Road Revenue Sources, Fiscal Years 2008-2011

Source	Revenue Fiscal Year 2008-2009	Revenue Fiscal Year 2009-2010	Budget Fiscal Year 2010-2011	Notes
Federal	\$462,661	\$374,987	\$256,840	
Federal Forest Timber Receipts	\$462,661	\$374,987	\$256,840	Ends in 2012
State	3,115,869	\$2,800,000	\$3,000,000	
SB 994	\$400,000	N/A	N/A	One-time payment
Fuel Taxes	\$2,715,869	\$2,800,000	\$3,000,000	
Local	1,981,482	1,405,000	1,744,439	
Coos Bay Wagon Road	\$655,990	\$563,000	\$364,439	Ends in 2012
Permits	\$33,179		\$40,000	
Work/County Departments	\$1,011,348		\$250,000	
Work Outside Agency	\$118,861	\$842,000	\$900,000	
Miscellaneous	\$86,147		\$150,000	
Interest	\$75,957		\$40,000	
Total Revenues	\$5,560,012	\$4,579,987	\$5,001,279	

Source: Coos County, 2010

In addition to the traditional revenue sources, the County has received several grants from various agencies in recent years for capital projects as listed below:

- Bandon Marsh funded by U.S. Fish and Wildlife and Federal Highway Administration (FHWA) for \$4.4 million.
- Repairs to South Powers Highway funded by FHWA for \$4.8 million.
- Culvert replacements funded by Coos Watershed for a \$1.8 million contribution.
- Federal American Recovery and Reinvestment Act of 2009 (ARRA, or Stimulus Package) of \$876,000, with \$508,000 in County match funded West Central Boulevard sidewalk and paving and Anson Rodgers bridge rehabilitation.
- Major storm repairs through the Surface Transportation Program for approximately \$700,000.

Overall Project Needs

The Coos County TSP identifies a variety of roadway, bridge, natural hazard, safety, bicycle, and pedestrian projects for the next 20 years. Table 7-2 summarizes the short-term, mid-term, and long-term needs of the County.

Table 7-2. County TSP Project Cost Summary

Project Locations/Primary Responsibility	Number of Projects	Estimated Cost(2010 \$) *
Short-Term / High Priority (0-5 Years)		
Projects on State Highways	27	\$17,977,500
Projects on County Roads	21	\$15,915,000
Short-Term/High Priority Subtotal	48	\$33,892,500
Mid-Term / Medium Priority (5-10 Years)		
Projects on State Highways	15	\$5,335,000
Projects on County Roads	26	\$33,348,000
Mid-Term/Medium Priority Subtotal	41	\$38,683,000
Long-Term / Low Priority (10-20 Years)		
Projects on State Highways	26	\$24,212,500
Projects on County Roads	18	\$18,945,000
Long-Term/Low Priority Subtotal	44	\$43,157,500
All Projects		
Projects on State Highways	68	\$47,525,000
Projects on County Roads	65	\$68,208,000
TOTAL	133	\$115,733,000

*Estimated costs exclude bridge projects and a few other projects with undetermined costs.

There are 68 projects identified on state highways; however, inclusion of an improvement in the TSP does not represent a commitment by ODOT to fund, allow, or construct the project. Projects on the State Highway System that are contained in the TSP are not considered

"planned" projects until they are programmed into the Statewide Transportation Improvement Program (STIP). As such, projects proposed in the TSP that are located on a State Highway cannot be considered mitigated for future development or land use actions until they are programmed into an adopted STIP or ODOT provides a letter indicating that the project is "reasonably likely." Highway projects that are programmed to be constructed may have to be altered or cancelled at a later time to meet changing budgets or unanticipated conditions such as environmental constraints.

The TSP identifies 65 projects on county roads with a total funding need of over \$68 million. A comparison of funding needs and potential revenue follows.

Evaluation of County Funding Needs and Potential Revenue

The TSP has identified the need for Coos County to fund over \$68 million in transportation improvements during the next 20 years (Table 7-3). This estimate excludes the bridge projects since these projects have been fund through the STIP in the past and cost estimates for bridge replacement and improvements are not available.

Table 7-3. County TSP Project Cost Summary

Category/Priority	Estimated Cost(2010 \$)
<i>Pavement Improvements – Summary</i>	
High Priority / Short Term (0-5 Years)	\$3,590,000
Medium Priority / Mid Term (5-10 Years)	\$21,630,000
Low Priority / Long Term (10-20 Years)	\$18,540,000
Pavement Improvements Subtotal	\$43,760,000
<i>Natural Hazards Mitigation – Summary</i>	
High Priority / Short Term (0-5 Years)	\$10,450,000
Medium Priority / Mid Term (5-10 Years)	\$1,068,000
Low Priority / Long Term (10-20 Years)	\$405,000
Natural Hazards Mitigation Subtotal	\$11,923,000
<i>Roadway Safety Improvements – Summary</i>	
High Priority / Short Term (0-5 Years)	\$975,000
Medium Priority / Mid Term (5-10 Years)	NA
Low Priority / Long Term (10-20 Years)	NA
Roadway Safety Improvements Subtotal	\$975,000
<i>Bicycle And Pedestrian Improvements – Summary</i>	
High Priority / Short Term (0-5 Years)	\$900,000
Medium Priority / Mid Term (5-10 Years)	\$10,650,000
Low Priority / Long Term (10-20 Years)	NA
Bicycle and Pedestrian Improvements Subtotal	\$11,550,000
TOTAL	\$68,208,000

Short-Term, High Priority Projects

The TSP identifies those projects which are highest priority for the County with a goal of completing those improvements (pavement, natural hazards mitigation, safety, bicycle, and pedestrian) within five years. A comparison of the forecast revenue stream and forecast expenses is summarized in Table 7-4.

**Table 7-4. County Revenues and Expenses, Fiscal Years 2011-2015:
High Priority Projects**

Revenue & Expenses	Amount
Net Revenue	
State Revenue ¹	\$22,140,000
County Revenue ²	\$6,900,000
Total Net Revenue	\$29,040,000
Expenses	
Total 0-5 Years High-Priority Projects ³	\$15,915,000
<i>Pavement Improvements High Priority</i>	<i>\$3,590,000</i>
<i>Natural Hazards Mitigation High Priority</i>	<i>\$10,450,000</i>
<i>Roadway Safety Improvements High Priority</i>	<i>\$975,000</i>
<i>Bicycle and Pedestrian Improvements High Priority</i>	<i>\$900,000</i>
Other Road Department Expenses ⁴	\$15,000,000
Total Expenses	\$30,915,000
Revenue-Expenses Remainder	(\$1,875,000)

Notes:

1. Calculated based on ODOT forecast of net county apportionment revenues for fiscal years (July 1 through June 30) 2010-2011 through 2014-2015 and November 2010 Coos County vehicle registrations.
2. The County Road Department estimated revenue from permits, courthouse vehicles, work for other County departments, work outside the agency, miscellaneous, and interest in 2010-2011 the Department operating budget.
3. In 2010 dollars.
4. The County Road Department estimated expenses from fuel, utilities, supplies, personal services, training, contingency funds, and other expenses.

Sources: ODOT, 2010; Coos County, 2010

The state revenue estimate is based on the ODOT Summary of Transportation Economic and Revenue Forecasts of June 2010 (released September 2010), prepared by the Economics and Financial Analysis Unit of ODOT Financial Services, which provides the net county apportionment forecast for ODOT fiscal years through 2015. State apportionment to counties is based on a percentage of vehicle registrations. Assuming that vehicle registrations in Coos County remain at approximately 1.88 percent of the state total (77,459 registrations as of November 2010 of the state total of 4,120,919 registrations), Table 7-4 presents ODOT forecasts of net revenues for Coos County for the next five years. The net revenues include weight mile tax, motor fuels tax, driver and vehicle fees, Oregon Transportation Investment Act (OTIA), House Bill (HB) 2041 and 2388, and Jobs and Transportation Act (JTA) funds. The ODOT fiscal year is July 1 through June 30.

The County Road Department estimates 2010-2011 revenue of \$1,380,000 from permits, courthouse vehicles, work for other County departments, work outside the agency, miscellaneous, and interest earned. This revenue stream was assumed to remain the same over the next five years.

Expenses are comprised of the high priority (0 to 5 year) projects on the County Project List and other Road Department expenses, which are estimated at approximately \$3 million annually.

This comparison shows a shortfall of less than \$2 million, but does not account for local matching funds needed for state and federal projects.

To fully fund the high priority projects, the County will need to seek additional funding sources. In the past, Coos County has funded Safety projects through the STP, STIP, and SHSP. Bridge projects were also primarily STIP-funded. Coos County used HEP funds for Natural Hazard projects. Funding from these sources may be available to augment County resources in the short term. In addition, ODOT's Pedestrian and Bicycle Grant Program could be a short-term funding source.

Long-Term, Medium and Low Priority Projects

To evaluate how medium- and long-term revenue streams may compare with estimated project costs, two different levels of annual revenue¹⁴ were assumed. Table 7-5 shows projected shortfalls for two scenarios, one assuming a \$1,000,000 per year revenue stream and the other assuming \$2,000,000 per year revenue stream.

Table 7-5. Medium- and Long-Term Estimated County Revenues and Expenses

	Estimated Cost (2010 \$)	Assumed Annual Revenue Available for Improvement Projects			
		\$1,000,000		\$2,000,000	
		Revenue Stream	Revenue Shortfall	Revenue Stream	Revenue Shortfall
TSP Projects					
Medium Priority (5-10 Years)	\$33,348,000	\$5,000,000	(\$28,348,000)	\$10,000,000	(\$23,348,000)
Low Priority (10-20 Years)	\$18,945,000	\$10,000,000	(\$8,945,000)	\$20,000,000	\$1,055,000
Total	\$52,293,000	\$15,000,000	(\$37,293,000)	\$30,000,000	(\$22,293,000)

Note: The revenue available for improvement projects excludes County Road Department such as fuel, utilities, supplies, personal services, training, contingency funds, and other expenses.

At either of these levels of revenue, Coos County would experience significant shortfalls in funding transportation system improvements during the 20-year TSP cycle. These calculations show that it will be difficult for Coos County to rely on traditional sources to fund basic maintenance activities and any new improvements in the future.

¹⁴ ODOT does not forecast weight mile tax, motor fuels tax, driver and vehicle fees, and other funds more than five years.

Potential Funding Sources

Secondary in importance to roadway and bridge maintenance is the construction and reconstruction of transportation facilities within the County. The paving of existing gravel roads continue to be a priority as funding is available. The majority of the projects identified in the TSP are associated with paving existing roads to improve safety or to address ground movement slides along County roads. The TSP identifies the need for Coos County to continue to pave gravel roads during the next 20 years.

Three national trends are affecting Coos County traditional sources of revenues:

1. The shift of transportation finance responsibilities from federal government to state government and state government to local government, particularly the long-term decline of federal grant assistance for roadway projects. State and local government will bear an increasing share for financing future transportation needs
2. Increasing unreliability of gas tax revenue—as fuel efficiency increases and use of alternative fuel vehicles increases, gas tax revenues will decrease.
3. Elimination of the federal forest timber receipts in 2012.

For Coos County, maintenance of the existing system is the main priority. Maintenance activities include road grading, ditching, culvert replacement and cleaning, spraying for vegetation control, paving and patching (cold mix), shoulder rocking, brushing and mowing, striping, signage, and bridge maintenance. When possible, Coos County does fund some new improvement projects that primarily receive funding from federal and state sources. Given existing and projected future funding limitations, Coos County will have limited ability to share funding responsibilities for non-maintenance activities. The current funding sources, used by Coos County, are detailed below.

Federal Sources

Federal funding sources account for approximately 21 percent of transportation project funding within the state of Oregon. The most significant federal sources have been the Federal Highway Trust Fund and federal forest revenues. However, the allocation of federal timber receipt revenue is scheduled to end in 2012.

Federal Highway Trust Fund

Revenues from the fund originate from motor vehicle fuel taxes, sales taxes for heavy trucks and trailers, tire taxes, and annual heavy truck use taxes. Allocated to individual states on an annual basis, these revenues are used by the state, counties, and cities and must be matched with state and local funds.

Surface Transportation Program (STP)

The STP is a federal multi-modal block-grant-type program that provides funds for a broad range of transportation uses. Projects that qualify can include highway and transit capital projects, carpool projects, bicycle and pedestrian facilities, planning, and research and

development. Allocated to the State, the STP funds are then sub-allocated to MPOs, cities (outside of an MPO), and counties on a formula basis by the Oregon Transportation Commission.

STP Transportation Enhancements Program – The State of Oregon is required to set aside 10 percent of the yearly STP revenues received and dedicate those funds for Transportation Enhancement Activities. Comprised a broad range of projects, enhancement funds are allocated to local jurisdictions throughout the state on a competitive basis and require a 20-percent non-federal match (Oregon’s required match is 10.27 percent because of the state’s large share of publicly owned land). Projects eligible for transportation enhancement funding include the following:

- Pedestrian and bicycle facilities
- Preservation of abandoned railway corridors
- Landscaping and other scenic beautification
- Control and removal of outdoor advertising
- Acquisition of scenic easements and scenic or historic sites
- Scenic or historic highway programs; historic preservation
- Rehabilitation and operation of historic transportation buildings, structures, or facilities
- Archaeological planning and research
- Mitigation of water pollution due to highway runoff

In fiscal year 2008-2009, the County made improvements to Boat Basin Drive funded by ODOT Transportation Enhancement for \$1.1 million with \$237,840 County matching funds.

STP Safety Funds – An additional 10 percent of base STP funding allocated to the states must be dedicated for safety programs (hazard elimination, rail-highway crossings, etc.). The match rate for safety projects is 80 percent federal, 20 percent state or local (Oregon’s required match is 10.27 percent because of the state’s large share of publicly owned land).

Highway Bridge Replacement and Rehabilitation Program (HBRR)

The HBRR funds replacement or maintenance of existing bridges. Placement and construction of new bridges are not eligible for funding under this program. Program funds are currently distributed through the Statewide Transportation Improvement Program (STIP) under “Bridge Replacement and Rehabilitation”. These funds will eventually be distributed according to the Unified Bridge Program, a rating system that indicates the condition and traffic level on each bridge in the State. In fiscal year 2008-2009, the County received \$6,905,000 through this program for Beaver Creek Bridge and Robison Bridge with \$1,075,000 in County matching funds.

Hazard Elimination Program (HEP)

The HEP targets funding for safety improvement projects on public roads and must be sponsored by a County or City. In order to be eligible for federal aid, the projects would need to be part of either the financial element of a TSP or included on the annual listing of rural projects by ODOT. However, HEP-funded projects would not have to be part of the approved STIP to receive STIP funding.

State of Oregon Sources

In Oregon, the three major sources of revenue for roadway projects and maintenance include motor vehicle fuel taxes, motor vehicle registration fees, and truck weight-mile taxes¹⁵. The net revenues from these three sources are deposited into the State Highway fund. The revenues are constitutionally dedicated for construction, improvement, maintenance, operation and use of public highways, roads, streets, and roadside rest areas. 24.38 percent of these revenues are allocated to counties, based on vehicle registration.

State Transportation Improvement Program (STIP)

The primary programming document that identifies transportation priorities for federal and state funding in Oregon, the STIP provides a schedule and identifies funding for projects throughout the state. Transportation projects are only eligible for STIP funding that is identified in adopted and acknowledged TSPs. Projects included in the STIP are regionally significant, have been given a high priority through planning efforts, and are planned for construction during a 4-year period. In fiscal year 2008-2009, the County received \$1,326,418 in STIP funds for repairing the Sitkum Lane slide MP 33.8 road failure, 8th Street lakeside sidewalks and pedestrian improvements, repairing Transpacific Lane failures, and repairing the North Lake Lane road failure at MP 5.

State Highway Fund

The major source of funding for transportation capital projects statewide, State Highway Fund revenues are appropriated by the OTC on an annual basis based on population for cities and registered vehicles for counties. Revenues in support of the State Highway Fund are generated from a combination of state fuel taxes, vehicle licensing and registration fees, and weight-mile tax assessed on trucks. State Highway Trust Fund revenues may be used only for construction and maintenance of state and local highways, bridges, and roadside rest areas, but a portion of the fund must be spent on walkways and bikeways. Net revenues have historically been proportioned to the three levels of government as follows:

- Cities – 15.57 percent
- Counties – 24.38 percent (by number of vehicles registered)
- State – 60.05 percent (by population)

¹⁵ In Oregon, commercial vehicles over 26,000 pounds pay a user fee based on the number of miles traveled on public roads within Oregon. The per-mile rate is based on the declared weight of the vehicle, and for vehicles weighing over 80,000 pounds, the number of axles. Vehicles paying the weight-mile tax are exempt from the use-fuel (diesel) tax.).

Revenues from increased tax rates would be shared on a 20-30-50 percent basis, respectively for cities, counties, and state. Improved fuel efficiency may reduce gas tax revenues.

ODOT Bicycle and Pedestrian Program

The Pedestrian and Bicycle Grant Program is a competitive grant program that provides approximately \$5 million dollars every two years to Oregon cities, counties and ODOT regional and district offices for design and construction of pedestrian and bicycle facilities. Proposed facilities must be within public rights-of-way. Grants are awarded by the Oregon Bicycle and Pedestrian Advisory Committee. At least one percent of the State Highway Fund must be expended for development of footpaths and bikeways. Projects must have a minimum 10 percent local match.

Connect Oregon Program

The first major funding initiative targeted at multimodal or non-highway transportation efforts in Oregon, the Connect Oregon program is a \$100 million lottery-based initiative to invest in air, rail, marine, and transit infrastructure. The program aims to integrate the various modal components of the transportation system, thereby improving flow of commerce and reduce delays. The OTC selects the projects on the basis of grant applications.

Strategic Highway Safety Plan (SHSP)

The federal Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) requires that each state establish and implement a Strategic Highway Safety Plan (SHSP), which is a program of highway safety projects that is consistent with the requirements of 23 U.S.C. 135(g) Statewide Transportation Improvement Program (STIP). The SHSP is implemented across all jurisdictions; therefore, any funds directed toward implementing the plan may be applicable to safety projects outlined in the Coos County TSP.

Special Public Works Fund (SPWF)

The State of Oregon allocates a portion of state lottery revenues for economic development. The Oregon Economic Development Department provides grants and loans through the SPWF program to construct, improve and repair infrastructure in commercial/industrial areas to support local economic development and create new jobs. The SPWF provides a maximum grant of \$500,000 for projects that will help create or retain a minimum of 50 jobs.

Traffic Control Projects

The State maintains a policy of sharing installation, maintenance, and operational costs for traffic signals and luminaire units at intersections between State highways and city streets (or county roads). Intersections involving a State highway and a city street or county road that are included on the statewide priority list are eligible to participate in the cost sharing policy. ODOT establishes a statewide priority list for traffic signal installations on the State Highway System. The priority system is based on warrants outlined in the Manual for Uniform Traffic Control

Devices. Local agencies are responsible for coordinating the statewide signal priority list with local road requirements.

State Highway Fund Bicycle/Pedestrian Program

ORS 366.514 requires at least 1percent of the Highway Fund received by ODOT, counties, and cities be expended for the development of footpaths and bikeways. ODOT administers its bicycle/pedestrian funds, handles bikeway planning, design, engineering, and construction, and provides technical assistance and advice to local governments concerning bikeways.

Immediate Opportunity Fund (IOF)

The IOF is intended to support economic development in Oregon by funding road projects that assures job development opportunities by influencing the location or retention of a firm or economic development. The fund may be used only when other sources of funding are unavailable or insufficient, and is restricted to job retention and committed job creation opportunities. To be eligible, a project must require an immediate commitment of road construction funds to address an actual transportation problem. The applicant must show that the location decision of a firm or development depends on those transportation improvements, and the jobs created by the development must be “primary” jobs such as manufacturing, distribution, or service jobs.

County Sources

Oregon counties and cities have the legal authority to devise their own non-property tax and other local revenue structures without specific state enabling legislation. Although these sources are typically implemented at the city level, some are also applicable at a regional or multi-jurisdictional level as well. The institution of some of these revenue sources could make available some of the transportation fund revenue that currently goes towards maintenance and preservation. Existing and potential local funding sources are listed and described below.

The TAC (comprised of Coos County and ODOT staff members) considered various potential funding sources at its October 6, 2010 meeting. They determined that the following methods and sources are viable for consideration by Coos County.

Local Improvement Districts (LID)

Local Improvement Districts (LIDs) are created by property owners within a specific area to raise revenues for constructing street improvements within the same district. LIDs may be used to assess property owners for improvements that benefit properties. Property owners typically enter into LIDs because they see economic advantage to the improvements. Fees are paid with property tax bills. LIDs can be implemented to fund new connector roads that will benefit one or more groups of property owners at a higher rate than the county as a whole. LIDs are particularly beneficial to improve local roadways to County standards. LIDs generally are geographically limited but can be matched with other funds where a project has a system-wide benefit. The formation of LID districts is governed by state law and local jurisdictional development codes. LID revenues can only be used to fund new capital improvement projects

and not for maintenance expenses. LID revenues could be combined with other revenue sources. In Coos County, LIDs have been used in the past, for example, to improve Wallace Road. The County has planned four LIDs in the 2010-2011 capital improvements program: Stage Road, McFarland Road, North Way, Timber Lane, totaling \$904,300. However, there are few areas where they can be used in the future.

Revenue and General Obligation Bonds

Revenue bonds are issued/sold by government agencies and repaid by specific user fees or service charges. The bonds are typically secured by stable revenue stream, such as a local gas tax, street utility fee, or toll.

General Obligation Bonds pay for construction of large capital improvements. This method is typically used to fund road improvements that will benefit a large portion of the county. General Obligation Bonds add the cost of the improvement to property taxes over a period of time. Oregon State law requires a double majority voter approval for instituting General Obligation Bonds. Revenue is collected in property tax billings.

System Development Charges/Traffic Impact Fees

A System Development Charge (SDC) is a one-time fee assessed on new development at the time of development approval (development or building permit). An SDC is intended to finance necessary capital improvements needed as a result of that development. The purpose of the charge is to recoup proportionate share of jurisdiction's capital costs for infrastructure. SDCs can be used for capital costs off-site, throughout the jurisdiction. The fee, which can vary for different land uses, is calculated based on the estimated number of vehicle trips generated by the proposed development. Development charges are calculated to include the costs of impacts on adjacent areas or services. SDCs ensures that existing residents and businesses are not subsidizing new development.

Oregon Revised Statute (ORS) 223.208-314 authorizes local governments to establish SDCs. The charges must be used to fund a capacity increase on (not maintenance of) of the transportation system. SDCs can be used to fund future projects or to reimburse the cost of funding previously constructed projects. ORS 223.309 requires that the local government must have a Capital Improvement Program (CIP) before establishing an SDC system. SDCs are pooled and expended on projects identified in the CIP. ORS 223.311 requires that the local government designates special accounts for SDC funds and perform annual accounting.

County Public Works Fund

The fund accounts for the general operations of the County Road Department. Primary revenue sources in the past have included federal forest fees, motor vehicle fees, and interest allocation. Expenditures are for the construction and maintenance of roads and bridges.

County Vehicle Registration Fee

With voter approval, Oregon counties may impose a vehicle registration fee that is no more than the state's vehicle registration fee (currently \$54 for two years). For a County registration fee, ODOT would collect revenue from the fees and pay the revenue back to the counties that establish registration fees. The Oregon Constitution requires all revenues to be used for the construction and maintenance of highways, roads, and streets.

To incentivize the purchase of fuel-efficient and light-weight vehicles by county residents that would lessen greenhouse gas emissions, vehicle registration fees could be made proportional to vehicle characteristics such as engine displacement (e.g., number of cylinders), fuel efficiency, gross vehicle weight, or vehicle type. Adoption of such a scheme is known as "feebates".

According to the ODOT Department of Motor Vehicles, as of November 2010, there were 77,459 registered vehicles in Coos County (not including exempt government vehicles, but including all others¹⁶). Each dollar of a County registration fee would therefore generate about \$77,000, minus the administrative collection cost by ODOT. A \$10 annual registration fee could generate a gross of approximately \$770,000. Coos County would need to enact an ordinance to collect, enforce, and administer the vehicle registration fee.

Traffic Impact Fees

This method assesses one-time fees to finance necessary off-site road improvements associated with new development. The fee, which can vary for different land uses, is calculated based on the estimated number of vehicle trips generated by the proposed development. Revenues are generated in this manner and must be used for capital improvements and not maintenance activities. If the jurisdiction has SDCs, it must have a mechanism to allow credit for SDCs paid.

Gas Tax

Gas tax revenues can be used to fund either operating or capital costs, but the Oregon Constitution restricts gas tax revenue to road or bridge projects (not transit). A local gas tax would be assessed at the pump. Gas taxes generally measure demand for use of transportation facilities, so the equity is fairly high. However, fuel revenues are expected to level off in the short-term and then drop permanently, as the purchasing power of fuel revenues decreases with inflation and more fuel-efficient vehicles are purchased. Coos County would need to enact an ordinance to collect, enforce, and administer the vehicle fuel taxes.

Hotel/Lodging or Rental Car Tax

Many Oregon jurisdictions impose a local hotel tax (also known as a transient room tax). Presently, there are at least four jurisdictions in Oregon (Lake Oswego, Lincoln City, Umatilla

¹⁶ Passenger, bus, truck, farm truck, heavy trailer, light trailer, for-rent trailer, motorcycle, travel trailer, camper, motor home, MCTD, and snow mobile

County, and Union County) that specifically dedicate revenue from a hotel/lodging tax to transportation projects. A rental car tax is similar to the hotel/lodging tax.

The Oregon Employment Department (OED) reports industry information by County. For the accommodation category¹⁷ in Coos County, the OED reports 37 accommodation business establishments in 2009 (the most recent data). It does not list establishments within incorporated cities separately from those in unincorporated areas. The data source is quarterly unemployment tax records. The OED notes that “business establishments” does not equal the number of businesses because one business may have a number of establishments or multiple establishments in one location. The OED Employer Database lists 75 businesses in the accommodation category (33 hotels and motels, 25 RV parks, 9 bed and breakfast inns, 5 recreation and vacation camps, and 2 other), most of which are on the coast. The OED Employer Database provides annual sales data broken down into five categories: less than \$500,000, \$500,000 to \$1,000,000, \$1,000,000 to \$2,500,000, \$2,500,000 to \$5,000,000 (only the Osprey Point RV Resort) and \$5,000,000 to \$10,000,000 (only the Red Lion). With this limited sales data, it is not possible to estimate how much revenue the implementation of an accommodation tax would generate. Coos County would need to enact an ordinance to collect, enforce, and administer the lodging fee.

Property Tax

Local property tax revenues could be used to fund transportation projects and maintenance.

Expiring and Unlikely Funding Sources

None of the funding programs or sources identified in this section are currently applicable for consideration by Coos County because either the funding programs are ending. The County currently cannot meet the program eligibility requirements, or the mechanisms currently are not viable.

Federal Funding Sources

The following federal sources are either expiring or none of the projects on the County TSP Project List are eligible. Expiring sources are listed because they were a past source of County funding. Ineligible sources are listed because other County identified needs not on the county TSP Project List may be eligible.

Secure Rural Schools and Community Self-Determination Act/Timber Receipts

For a century, the U.S. Department of Agriculture Forest Service shared 25 percent of its timber receipts with counties containing large areas of federal land. These counties have a significantly reduced tax base, but are required to provide services throughout the county. Counties are

¹⁷ Industries in the Accommodation subsector (NAICS 721) provide lodging or short-term accommodations for travelers, vacationers, and others. The subsector is organized into three industry groups: (1) traveler accommodation, (2) recreational accommodation, and (3) rooming and boarding houses.

required to dedicate 75 percent of their share to roads and 25 percent to schools. The Secure Rural Schools and Community Self-Determination Act of 2000 (SRS Act), Public Law 106-393, was enacted to provide five years of transitional assistance to rural counties affected by the decline in revenue from timber harvests on federal lands. The last payment authorized under P.L. 106-393 was for FY 2006. On October 3, 2008, the Secure Rural Schools and Community Self-Determination Act of 2000 was reauthorized as part of Public Law 110-343. There will be no additional revenue after 2012.

Oregon Senate Bill 994

The 2007 Legislature passed SB 994, Sections 15 to 17, to provide short-term budgetary relief to Oregon counties at a percentage based upon anticipated loss of federal Secure Rural Schools funding to be used for improvement of existing county roads. This was a one-time appropriation.

Federal Transit Administration (FTA)

The various programs initiated by FTA include funds for major capital investments (New Starts and Small Starts FTA Section 5309), fixed guideway modernization (FTA Section 5309), bus and bus facilities (FTA Section 5309, 5318), elderly and disabled persons (FTA Section 5310), rural transit assistance (FTA Section 5311(b)(3)), and formula grants for other than urbanized areas (FTA Section 5311). There are no transit projects on the County TSP Project List. Funding may be available through these programs for the projects in the Coos County Coordinated Transportation Plan that have no identified cost or schedule.

National Scenic Byway Program

The only designated National Scenic Byway in Coos County is U.S. 101. Although improvement projects identified in the byway's Corridor Management Plan would qualify for federal funding, the TSP does not identify any projects on U.S. 101.

Safe Routes to School

ODOT is accepting applications for approximately \$2.2 million in federal funds for projects that improve safety around Oregon schools. Eligible projects must be located within a two-mile radius of a qualified K-8 school facility. The only school access project identified in the TSP is for a high school, not a K-8.

Federal Office of Ocean and Coastal Resources Management

Part of the National Oceanic and Atmospheric Administration, the Office of Ocean and Coastal Resource Management provides support and guidance to state and territory coastal programs and estuarine research reserves. There is one program that may provide funding for transportation projects. The Coastal Resource Improvement Program under Section 360A of the Coastal Zone Management Act allows state coastal zone management programs to choose to spend up to half of their Section 306 funds on small-scale construction or land acquisition projects that enhance public access to the coast, facilitate redevelopment of urban waterfronts,

or preserve and restore coastal resources. This funding requires a one-to-one match. Half of the funds can be used for paths and walkways to access public beaches. The TSP does not identify any coastal access projects.

U.S. Department of Homeland Security

With a focus on reducing the nation's vulnerability to terrorism, projects available for funding through the Department of Homeland Security would involve port security/operations and lifeline routes. It is unlikely that roadways in Coos County jurisdiction would qualify.

Alliance for Community Traffic Safety Oregon Building Safer Communities Mini-Grant Program

The Building Safer Communities Mini-Grant program provides funding to promote traffic safety in Oregon. This is a reimbursement-based grant-- funds would initially come from the County and would be reimbursed based on the claims and source documents submitted with reports. Eligible activities include conduct safety audits using surveys, community meetings and data to identify local traffic safety problems and develop community-specific projects. The grant size is \$5,000. 2010-2011 grants were awarded in November 2010. The TSP does not identify any projects that include safety audits.

Unlikely Local Funding Mechanisms

The TAC (comprised of Coos County and ODOT staff members) considered various potential funding sources at its October 6, 2010 meeting. They determined that the following methods and sources were not worth considering or not applicable. Reasons for rejection include that the method would generate little revenue, that the revenue would be limited to use on one specific facility or a small geographic area, and that the method is not currently used in Oregon and so is not likely to be implemented in Coos County. The methods are listed here in order to document other funding mechanisms that may be more applicable for consideration in future TSP updates.

General Fund

The general fund for Coos County is not applied toward transportation capital improvement projects or maintenance. Use of general fund for transportation maintenance and projects is not likely to be viable in the future given current economic conditions.

Parking Fees

Parking fees (and parking fines) at boat launches, county parking lots, or within unincorporated communities would generate revenue for transportation-related improvements. The low number of parking spaces in Coos County, especially in public lots, would generate little revenue. Generated revenue would also be used to offset the costs of installation, operation, and maintenance of public parking lots. Use of parking fees to fund transportation maintenance and improvements is better suited for incorporated cities that have large inventory of parking spaces and lots.

Parking Tax

A parking tax imposes a tax on the number of parking spaces at a business. This is more appropriate for urban areas. The low number of parking spaces in Coos County would generate little revenue. Oregon state law does not preclude local governments from developing a regional parking tax based on the number of parking spaces at a business. However, it has not been determined if a parking tax collected through business licenses fees could legally be used for transportation projects. There could be a high administrative cost since a database of the parking spaces for subject properties and an accounting system would need to be developed. Again, use of parking taxes to fund transportation maintenance and improvements is more applicable to incorporated cities that have large inventories of parking spaces and lots.

Payroll tax

Transit and transportation districts (for example, Tri-Met in Portland and Lane County) can levy income taxes up to 1 percent of payroll and 0.6 percent of self-employment to fund public transit. Unless Coos County wants to consider the establishment of a transit district, use of payroll taxes is not a viable funding option.

Road/Transportation Utility Fee Program

A road/transportation utility fee program provides funds for roadway infrastructure within a specific area of benefit or geographic area. A fee is assessed to all businesses and households in the area for use of streets based on generic trip generation rates for land use categories. Therefore it does not require monitoring of actual travel. Fees typically are collected monthly with other utility bills and are used to fund maintenance and preservation of existing facilities within that area. Street utility fees are currently collected in the cities of Ashland and Medford, for example. This type of program is more effective in an urban area with a compact network of roadways that have on-going maintenance needs. Given the rural nature of Coos County, a road/transportation utility fee program is not viable for consideration by Coos County.

Sales or Income Tax

A sales tax would tax goods sold within Coos County. An income tax would tax income earned within Coos County. No jurisdiction in Oregon currently imposes either. Typically a municipality establishes a transportation authority to administer the funds if the sales tax is to be dedicated for transportation improvements. A sales or income tax is not a viable funding source given that no other Oregon municipality has been successful in implementing a local transportation sales or income tax.

Tolling

Tolling is used in many states to recover road and especially bridge construction, operation, and maintenance costs. There are no toll roadways in Oregon. Tolls can be removed when construction has been paid in full or could remain in place for the continued operation and maintenance of the roadway or bridge. Toll revenue must be used for the tolled facility only. Tolling is not a viable funding option for Coos County.

Urban Renewal Districts and Tax Increment Financing

Urban renewal districts are formed in selected areas, creating a tax-increment financing mechanism to generate urban renewal funds. TIF works by ‘freezing’ property values at the beginning of an urban renewal plan, and assessing a fee only on the incremental growth in property value observed since the beginning of the urban renewal district plan. The revenues generated within an urban renewal district are used to secure bonds to finance projects and programs within the district. Use of the funds is not limited to transportation projects. Funds generated within each district must be spent within that urban renewal district.

Before an urban renewal district can be established, the needs and required funding must be identified. This would typically take the form of an urban renewal plan. The urban renewal plan would specify the boundaries for the urban renewal district, the proposed improvements to be made, the costs associated with these improvements, and the amount and source of funding. A new urban renewal area would require approval by the jurisdiction’s designated urban renewal agency, and cannot overlap with existing urban renewal plans. Urban renewal districts typically are set up by incorporated cities or for urbanizing areas within city urban growth boundaries (UGBs). Areas outside UGBs would need to be brought into the UGB before an Urban Renewal Plan went into effect.

The establishment of urban renewal districts in Coos County, outside incorporated cities, is not likely a viable funding source given the land use issues associated with urbanizing area being part of city UGBs.

Funding Strategy

Coos County has the jurisdictional responsibility to maintain and improve, when possible, a large inventory of roads and bridges covering a broad geographic area. Based on current economic conditions and projections, the amount and availability of funding for transportation system maintenance and future improvements is expected to continue to decrease. Coos County has continued to provide transportation maintenance services to existing roadways and bridges, but has had limited funding available for new improvement projects. As traditional funding sources continue to decrease at the federal and state levels, the County will consider a range of options to continue to fund ongoing maintenance activities, and to also fund a portion of the priority improvements identified in the TSP.

Coos County will continue to allocate County funding, when possible, to fund transportation maintenance and the highest priority improvement projects. The County will also continue to utilize available state and federal transportation funding programs, including the following sources:

- Federal
 - Surface Transportation Program (STP)
 - Highway Bridge Replacement and Rehabilitation Program (HBRR)
 - Hazard Elimination Program (HEP)

- State
 - State Transportation Improvement Program (STIP)
 - ODOT Bicycle and Pedestrian Program
 - Connect Oregon Program
 - Strategic Highway Safety Plan (SHSP)
 - Special Public Works Fund (SPWF)
 - State Highway Fund Bicycle/Pedestrian Program
 - Immediate Opportunity Fund (IOF)

In addition, Coos County will consider some of the alternative funding mechanisms, particularly local, outlined in this chapter to bridge the funding shortfall. The Road Department will consider alternative funding sources for required local matching funds (local match is required for many types of federal funds). The Road Department may partner with other County departments and agencies to take advantage of grant writing expertise and other technical assistance. Some of the local options to consider include:

- Revenue and General Obligation Bonds
- System Development Charges/Traffic Impact Fees
- County Vehicle Registration Fee
- Gas Tax
- Hotel/Lodging/ Rental Car Tax
- Property tax

Appendix

Review of Existing Plans and Policies

State, regional, and local transportation and land use plans and regulations were reviewed to identify elements that are applicable to the Coos County TSP.

State of Oregon Planning Documents and Regulations

The following state documents were reviewed as they relate to the development of TSPs or Coos County transportation facilities:

- Transportation Planning Rule - Statewide Planning Goal 12 and OAR 660, Division 12
- OAR 734, Division 51 (Highway Approaches, Access Control, Spacing Standards and Medians) (Amended 2007)
- Oregon Transportation Plan (2006)
- Oregon Highway Plan (1999, Amended July 2006)
- Highway Design Manual (HDM) (2003, Revised 2008)
- Oregon Bicycle and Pedestrian Plan (1995)
- Oregon Transportation Safety Action Plan (2004)
- Oregon Aviation Plan (2000)
- Oregon Rail Plan (2001)
- Oregon Public Transportation Plan (1997)
- Statewide Transportation Improvement Program

Transportation Planning Rule - Statewide Planning Goal 12 and OAR 660, Division 12

Statewide Planning Goal 12 (Transportation) requires cities, counties, metropolitan planning organizations (MPOs), and ODOT to provide and encourage a safe, convenient, and economic transportation system. Goal 12 is implemented through OAR 660, Division 12, the Transportation Planning Rule (TPR).

The purpose of the TPR is to promote “the development of safe, convenient and economic transportation systems that are designed to reduce reliance on the automobile so that the air pollution, traffic and other livability problems faced by urban areas in other parts of the country might be avoided.” Furthermore, to ensure that planned land uses are supported by and consistent with planned transportation facilities and improvements, the TPR promotes more careful coordination of land use and transportation planning. These objectives are primarily accomplished through TSP development based on inventories of local, regional and state transportation needs.

The Land Conservation and Development Commission adopted amendments to the TPR in March 2005 clarifying how the impact of plan amendments and zoning changes on transportation facilities are assessed. The amendments stipulate that a significant effect occurs only if a plan amendment or zone change affects the facility by the end of the planning period,

not if the effect occurs at any point during the planning period. The primary focus of this rule is on keeping land use and transportation in balance. The current amendments include new provisions that pay particular attention to proposed plan or land use regulation amendments within one-half mile of interstate interchanges. The concern is protecting the state's significant investments in interchanges and in the interstate system. These new provisions should be reflected in the Coos County TSP update.

The TPR requires local governments to adopt land use regulations consistent with state and federal requirements "to protect transportation facilities, corridors and sites for their identified functions (OAR 660-012-0045(2))." This policy is achieved through a variety of measures, including:

- Access control measures, which are consistent with the functional classification of roads and consistent with limiting development on rural lands to rural uses and densities;
- Standards to protect future operations of roads;
- A process for coordinated review of future land use decisions affecting transportation facilities, corridors or sites;
- A process to apply conditions to development proposals in order to minimize impacts and protect transportation facilities, corridors or sites;
- Regulations to provide notice to ODOT of land use applications that require public hearings, involve land divisions, or affect private access to roads; and
- Regulations ensuring that amendments to land use designations, densities and design standards are consistent with the functions, capacities, and performance standards of facilities identified in the TSP. See also OAR 660-012-0060.

OAR 734, Division 51 (Highway Approaches, Access Control, Spacing Standards and Medians) (Amended 2007)

OAR 734-051 (Division 51) directs the permitting, management, and standards of approaches to state highways to ensure safe and efficient operation of the state highways. Division 51 implements the policies in the Oregon Highway Plan (OHP), addressing the following:

- How to bring existing and future approaches into compliance with access spacing standards, and ensure the safe and efficient operation of the highway;
- Requirements regarding mitigation, modification and closure of existing approaches as part of project development; and
- The development of Access Management Plans and Interchange Area Management Plans to address Division 51 standards and ensure consistency with the provisions of OAR 731-015-0065 (Coordination Procedures for Adopting Final Facility Plans).

Oregon Transportation Plan (2006)

The Oregon Transportation Plan (OTP) is the state's long-range multi-modal transportation plan. The OTP is the overarching policy document among a series of plans that together form the state transportation system plan (TSP). The OTP considers all modes of Oregon's

transportation system as a single system and addresses the future needs of Oregon's airports, bicycle and pedestrian facilities, highways and roadways, pipelines, ports and waterway facilities, public transportation, and railroads.

The OTP was updated in 2006, with emphasis placed on maintaining the assets already in place, optimizing the existing system performance, creating sustainable funding, and investing in strategic capacity enhancements. The current OTP assesses state, regional, and local public and private transportation facilities through 2030. The OTP establishes goals, policies, strategies, and initiatives that address the core challenges and opportunities facing Oregon. It also provides the framework for prioritizing transportation improvements based on varied future revenue conditions.

Oregon Transportation Plan policy can be obtained at the following website:

<http://www.oregon.gov/ODOT/TD/TP/ortransplanupdate.shtml>.

Oregon Highway Plan (1999, Amended July 2006)

The 1999 OHP establishes policies and investment strategies for Oregon's state highway system over a 20-year period and refines the goals and policies found in the OTP. Policies in the OHP emphasize the efficient management of the highway system with the goals of increasing safety and to extending highway capacity, creating partnerships with other agencies and local governments, and using new techniques to improve road safety and capacity. These policies also link land use and transportation, set standards for highway performance and access management, and emphasize the relationship between state highways and local road, bicycle, pedestrian, transit, rail, and air systems. The policies applicable to planning for interchange improvements are described below, with impacts to interchange planning shown in italics.

Goal 1. System Definition. The following policies are applicable to the TSP update:

- Policy 1A (State Highway Classification System) calls for the implementation of a classification system for state highways to identify management objectives.
- Policy 1B (Land Use and Transportation) recognizes the need for coordination between state and local jurisdictions. The 2006 OHP amendments include a Special Transportation Area (STA) management plan
- Policy 1C (State Highway Freight System) states the need to balance the movement of goods and services with other uses.
- Policy 1F (Highway Mobility Standards) sets mobility standards for ensuring a reliable and acceptable level of mobility on the highway system.
- Policy 1G (Major Improvements) requires maintaining performance and improving safety by improving efficiency and management before adding capacity where improvements are needed.

Goal 2. System Management. The following policies are applicable to the project:

- Policy 2B (Off-System Improvements) helps local jurisdictions adopt land use and access management policies.

Goal 3. Access Management. The following policies are applicable to the project:

- Policy 3A (Classification and Spacing Standards) sets access spacing standards for driveways and approaches to the state highway system.
- Policy 3B (Medians) addresses the installation on non-traversable medians in state highways.
- Policy 3D (Deviations), establishes general policies and procedures for deviations from adopted access management standards and policies.

Highway Design Manual (HDM) (2003, Revised 2008)

The HDM provides design standards for state highways and associated highway elements. These standards are dependent on the highway's functional classification and project type (e.g., Modernization, Preservation, Safety, Operations, or Maintenance). For future roadway improvement projects on state facilities and their influence areas planned within Coos County, the HDM will serve as the guide concerning design processes, different design strategies such as urban preservation or interstate maintenance, and roadside inventory.

The HDM makes note of the fact that as some projects under ODOT roadway jurisdiction traverse across local agency boundaries, the roadway designer should be aware of locally-adopted design standards and guidelines.

Oregon Bicycle and Pedestrian Plan (1995)

The intentions of the Oregon Bicycle and Pedestrian plan include: implementing the Actions recommended by the OTP; guiding ODOT and local governments in developing bikeway and walkway systems; explaining the laws pertaining to the establishment of bikeways and walkways; fulfilling the requirements of the TPR; and providing standards for planning, designing and maintaining bikeways and walkways. The Plan is currently being updated and was originally scheduled to be completed and adopted by the Oregon Transportation Commission in 2009. The Draft Final Text of the Plan update is currently available on ODOT's website: <http://www.oregon.gov/ODOT/HWY/BIKEPED/planproc.shtml>.

The TSP update will address design standards for bicycle and pedestrian facilities in Coos County in conformance with the Oregon Bicycle and Pedestrian Plan.

Oregon Transportation Safety Action Plan (2004)

The Oregon Transportation Safety Action Plan (OTSAP) contains a set of broad, long-range goals, policies, and actions for developing an efficient, effective, and safe integrated transportation system for Oregon in the coming 20-40 years. In 2004, the OTSAP was updated from the original 1995 version, with intent to continue serving as the safety element for the OTP. The OTSAP identifies nine key actions for implementation by 2014 to address transportation safety problems in Oregon. They are shown below in Appendix Table 1.

Appendix Table 1. Oregon Transportation Safety Action Plan - The Nine Key Actions

Number	OTSAP Action	Significant Factor in Fatal Crashes
1	Traffic law enforcement strategy	Speed, Occupant Protection, DUII
2	Traffic law enforcement training	Speed, Occupant Protection, DUII
4	Judicial training	Speed, Occupant Protection, DUII
8	Transportation safety public information/education program	Speed, Occupant Protection, DUII
10	Expand driver education in Oregon	Speed, Occupant Protection, DUII, Young Drivers
16	Improve ODOT ability to allocate resources to the highest priority safety needs	Single Vehicle Run-off, Speed, DUII, Rural Roads
26	Develop an effective and integrated EMS system	Post crash medical care - availability and location
37	Revise driving under the influence of intoxicants (DUII) statutes	DUII
50	Continue public education efforts aimed at increasing proper use of safety belts and child restraint systems	Occupant Protection

Source: ODOT, 2004

Over the past two decades, there has been a dramatic decrease in transportation related deaths and injuries. This is in great part due to the tougher laws and more effective programs which serve as the foundation of the OTSAP.

Oregon Aviation Plan (2000)

The Oregon Aviation Plan further refines the goals and policies of the OTP through a set of policies and investment strategies for Oregon's public-use aviation system for the next 20 years. Appendix Table 2 lists the public use airports operating in Coos County. In addition to the four public airports, there are six privately-owned airfields/airstrips and two private helipads operating in Coos County.

Appendix Table 2. Coos County Airports

Name	Category	Category Definition
Southwest Oregon Regional Airport	1	Commercial Service Airport ¹
Bandon State Airport	4	Community General Aviation Airport ²
Lakeside State Airport	5	Low Activity General Aviation Airports ³
Powers Airport	5	Low Activity General Aviation Airports ³

Notes:

1. Category 1 - Commercial Service Airports - Accommodate scheduled major/national or regional/commuter commercial air carrier service.
2. Category 4 - Community General Aviation Airports - Accommodate general aviation users and local business activities.
3. Category 5 - Low Activity General Aviation Airports - Accommodate limited general aviation use in smaller communities and remote areas of Oregon.

Source: ODOT, 2000

Oregon Rail Plan (2001)

The Oregon Rail Plan updates the 1994 Oregon Rail Freight Plan and 1992 Oregon Rail Passenger Policy and Plan. The Plan summarizes state goals and objectives, measure the state's performance to-date and refines the projected costs, revenues, and investment needs with regard to rail transportation. The Plan contains three elements: 1) Rail Policies and the Planning Process; 2) Freight Element; and 3) Passenger Element.

The Coos Bay Branch Line of the railroad runs from Eugene to Coos Bay. The Federal Railroad Administration (FRA) classifies the Coos Bay Branch as Class 1 and 2 track (maintenance standards requiring maximum speeds of 10 or 25 mph), with Exception status (exemption from maintenance standards) between Coos Bay and Coquille. The Coos Bay Branch provides connections between Eugene and coastal communities including Reedsport, Coos Bay and Coquille. The Coos Bay Branch is not subject to weight or dimensional standards.

The Port of Coos Bay acquired most of the Coos Bay Branch Line through a Feeder Line Application action before the U.S. Surface Transportation Board. Financing of the acquisition was supported by a loan package administered by the Oregon Economic Development Department.

Currently there are no locations within Coos County served by passenger rail service. According to the Rail Plan, the Eugene-Coos Bay rail corridor served by the Coos Bay Branch line is unlikely to see passenger rail service in the foreseeable future due to the low population of the coastal communities, non-competitive rail travel times, and the high cost of track improvements.

Oregon Public Transportation Plan (1997)

The Oregon Public Transportation Plan (OPTP) contains a series of priorities intended to meet the needs for the proposed statewide public transportation system of 2015. The OPTP links the OTP, local corridor plans, and the Statewide Transportation Improvement Program (STIP) through its goals, policies, and strategies. More information on public transportation in Coos County is found under the section below, describing the Coos County Coordinated Transportation Plan (2007).

Statewide Transportation Improvement Program

The Statewide Transportation Improvement Program (STIP) is Oregon's four-year transportation capital improvement program. It is the document that identifies the funding for and scheduling of transportation projects and programs. The STIP includes projects on the federal, state, city, and county transportation systems, multimodal projects (highway, passenger rail, freight, public transit, bicycle and pedestrian), and projects in the National Parks, National Forests, and Indian tribal lands.

The STIP is updated every other year, with the cycle beginning in odd numbered years. The currently approved program is the 2008-2011 STIP. The Draft 2010-2013 STIP was released for

public review in October 2008 and can be accessed on ODOT's website:

<http://www.oregon.gov/ODOT/HWY/STIP/>.

Appendix Table 3 lists the 2008-2011 STIP projects impacting the transportation system in Coos County. Appendix Table 4 lists the 2010-2013 Draft STIP projects for Coos County.

Appendix Table 3. 2008-2011 STIP Projects for Coos County

Key	Section	Route	Highway Name	Total Cost	Description	Status	Year (FFY)
14225	Beaver Cr-Mid Fork Coquille R-Bundle 405	OR 42	Coos Bay-Roseburg	\$11,704,000	Repair Brs #03173a, 08843, 08876, 03212a, 088, 08935	PSEDOC	2010
15839	Sandy Creek Bridge #00482b	OR 42	Coos Bay-Roseburg	\$548,000	Repair Bridge #00482b	PSEDOC	2010
15840	Middle Fork Coquille River Bridge #09185	OR 42	Coos Bay-Roseburg	\$610,000	Deck Overlay, Bridge #09185	PSEDOC	2010
15841	Middle Fork Coquille River Bridge #09186	OR 42	Coos Bay-Roseburg	\$731,000	Deck Overlay, Bridge #09186	PSEDOC	2010
15846	Isthmus Slough, East Approach Br #01132f	OR 241	Coos River	\$7,163,000	Replace East Approach of Bridge #01132f	PSEDOC	2010
10844	Isthmus Slough Br/Bunkerhill Intersection	US 101	Oregon Coast	\$1,722,000	Environmental Assessment for New Bridge, Advanced R/W Purchase; Begin Design; Access Mgmt.	FNPLN	2008
10900	Coquille River (Bullards) Bridge Painting	US 101	Oregon Coast	\$772,000	Approach Span Rehabilitation on Structure 07020	FNPLN	2008
15013	McCullough Bridge To Fir Ave Paving	US 101	Oregon Coast	\$3,794,000	Grind/Inlay Pavement	PSEDOC	2011
13933	Powers-Agness Hwy: Burma Slide Sec (Mp4.4-8.4)	OR 542	Powers	\$23,892,000	Slide Stabilization, Gr, Dr, Bs, Pv	PSEDOC	2010

Source: ODOT, 2008

Appendix Table 4. 2010-2013 Draft STIP Projects for Coos County

Key	Section	Route	Highway Name	Total Cost	Description	Status	Year (FFY)
14225	Beaver Cr-Mid Fork Coquille R-Bundle 405	OR 42	Coos Bay-Roseburg	\$11,677,000	Repair Brs #03173a, 08843, 08830, 08876, 03212a, 08842, 0559b	PSEDOC	2010
15839	Sandy Creek Bridge #00482b	OR 42	Coos Bay-Roseburg	\$548,000	Repair Bridge #00482b	PSEDOC	2010
15840	Middle Fork Coquille River Bridge #09185	OR 42	Coos Bay-Roseburg	\$610,000	Deck Overlay, Bridge #09185	PSEDOC	2010
15841	Middle Fork Coquille River Bridge #09186	OR 42	Coos Bay-Roseburg	\$731,000	Deck Overlay, Bridge #09186	PSEDOC	2010
15013	McCullough Bridge To Fir Ave Paving	US 101	Oregon Coast	\$3,394,000	Grind/Inlay Pavement	PSEDOC	2011
16199	Tugman State Park - Spinreel Rd. Paving	US 101	Oregon Coast	\$2,459,000	Grind/Inlay and Overlay Pavement		2012
16201	Davis Slough - 2nd Street (Bandon) Paving	US 101	Oregon Coast	\$7,936,000	Grind/Inlay and Overlay Pavement		2013
16209	North Bend SB Couplet Safety Improvements	US 101	Oregon Coast	\$1,513,000	Adjust Lanes and Add Overhead Signing; Reconfigure SB Signal at Virginia		2012
15846	Isthmus Slough, East Approach Br #01132f	OR 241	Coos River	\$7,163,000	Replace East Approach ff Bridge #01132f	PSEDOC	2010

Source: ODOT, 2008

Coos County Planning Documents and Regulations

The following Coos County documents were reviewed:

- Coos County Transportation System Plan (1999)
- Coos County Comprehensive Plan (1985)
- Coos County Coordinated Transportation Plan (2007)
- Coos County Natural Hazards Mitigation Plan (2005)
- Coos County Zoning and Land Development Ordinance (1985)

Coos County Transportation System Plan (1999)

The Coos County Transportation System Plan (Coos County TSP) was adopted in 1999 by the Coos County Board of Commissioners as part of the Coos County Comprehensive Plan. The Coos County TSP is intended to ensure that the state and county transportation systems operate together and provide residents with transportation options which are in keeping with state guidelines and county ideals. As adopted, the Coos County TSP provided a basis for transportation planning in the near-term but did not meet the required 20-year planning horizon as defined in the TPR.

The 1999 document is superseded by this 2011 TSP.

Coos County Comprehensive Plan (1985)

The Coos County Comprehensive Plan was originally adopted in 1985. The Comprehensive Plan is a locally conceived statement of statewide policy guiding all planning activities within Coos County, including conservation and development. The Comprehensive Plan includes the following transportation goal:

“Coos County shall strive to provide and encourage a transportation system that promotes safety and convenience for citizens and travelers and that strengthens the local and regional economy by facilitating the flow of goods and services.”

The Comprehensive Plan identifies county-wide transportation needs and deficiencies which include:

- Poor transportation networks connecting Coos County to major population centers;
- Poor mobility for the transportation-disadvantaged;
- The need for an east-west high speed link;
- Excessive street standards emphasizing the automobile;
- Matching limited financial resources with roadway improvement needs;
- Need for alternative modes of transportation (e.g. transit, passenger rail, etc); and
- Inefficient freight movement by rail.

The goals and objectives in the Comprehensive Plan provide guiding principles for the planning and management of the Coos County transportation system and are incorporated in the TSP.

Coos County Coordinated Transportation Plan (2007)

The Coos County Coordinated Transportation Plan addresses the existing transportation services and needs of County residents, focusing on the special needs of low income individuals and families, older adults, and people with disabilities. This plan focuses on the coordination of existing resources in order to improve the effectiveness and efficiency of transportation services. This Coordinated Transportation Plan satisfies federal legislation (the *Safe, Affordable, Flexible, Efficient Transportation Equity Act, a Legacy for Users* (SAFETEA-LU) requiring local communities to develop coordinated public transit/human service plans by 2007 as a condition for receiving federal transit assistance program funding.

Public transit in the County is provided by Coos County Area Transit Service District (CCAT), formed in January 2004. CCAT provides service combining deviated fixed route and demand response (or "dial-a-ride") bus service in Coquille, Myrtle Point, Bandon, and the Coos Bay/North Bend area. In addition, a "Loop Bus" service travels a fixed route around Coos Bay/North Bend. Taxi and limousine service is available primarily in the Coos Bay/North Bend area in conjunction with clientele traveling between the Southwestern Oregon Regional Airport, located in North Bend, and the Bandon Dunes Golf Resort. Region 7 of the Oregon Department of Human Services maintains a volunteer sedan transportation program for non-emergency medical transportation. The Powers Stage is a van service sponsored by the Powers Housing Authority which connects Powers to the Bay area on Tuesdays and Fridays. Curry Public Transit operates a bus service serving Coos County from Brookings to the Bay area on Monday, Wednesday, and Friday.

The Coordinated Transportation Plan compared transit dependent populations at both County and state level. According to the 2000 Census, there is a disproportionately large share of low income, elderly, and mobility impaired residents making up the population of Coos County. This transportation special-needs population is expected to increase significantly over the next 15 years, as the fastest growing segment of the population have begun turning 60. The Coordinated Transportation Plan provides recommendations for addressing this and other issues concerning service deficiencies, which include:

- Providing more public transit service to outlying areas of the County;
- Expanding public transit service to include more evening and weekend service as resources become available;
- Providing more frequent service on existing routes;
- Providing a higher level of paratransit services to those with special needs and expand paratransit service hours;
- Improving and expanding medical service for veterans; and
- Improving programs for people commuting to jobs and employment training programs, including shuttle services and ride-sharing/car pooling initiatives.

The Coos County TSP includes rural street standards for Local Residential Streets, Collector Streets, and Arterial Streets, taken from Section VII of the County's Subdivision Ordinance. The standards for existing and recommended streets are based on the proposed functional classification of the roadway and the average amount of traffic that is expected. The TSP update will include an update of the inventory of the existing street system, which includes functional classification for state and local facilities.

Coos County Natural Hazards Mitigation Plan (2005)

The Coos County Natural Hazards Mitigation Plan is a collaborative, comprehensive planning document that contains strategies intended to reduce risk and prevent loss from future natural hazard events across Coos County. The Mitigation Plan includes an inventory of critical housing, employment and industry infrastructure. The Mitigation Plan addresses the vulnerabilities and risks due to specific natural hazards and the current mitigation activities in place administered at state and federal levels. The Natural Hazards Mitigation Plan further includes individual community action items for eight individual communities in Coos County.

Coos County Zoning and Land Development Ordinance (1985)

The Coos County Zoning and Land Development Ordinance implements the Coos County Comprehensive Plan as the basis for all land use development within the County. The Ordinance establishes zoning districts, zoning classifications, design standards, and street and road standards.

Chapter VII of the Coos County Zoning and Land Development Ordinance contains standards for urban and rural roads, access management, and bicycle and pedestrian circulation.

Local Planning Documents and Regulations

The following local planning documents were reviewed:

- Bandon Transportation System Plan (2000)
- City of Coos Bay Transportation System Plan (2004)
- City of Coquille Transportation System Plan (1997)
- City of Lakeside Transportation Systems Improvement Plan (1995)
- City of Myrtle Point Pedestrian and Bicycle Plan (1995)
- City of North Bend Transportation System Plan (2004)
- North Bend Municipal Airport Master Plan (2002)

Bandon Transportation System Plan (2000)

The City of Bandon completed a TSP in 2000. The TSP establishes a system of transportation facilities and services adequate to meet the City of Bandon's identified transportation needs for the next twenty years. Bandon's Transportation System Plan summarizes the City's main transportation issues and identifies state and local policy and implementation requirements with which the TSP must be consistent.

Bandon's TSP states that "to ensure consistency, the City will closely monitor development of [Coos] County's TSP as it progresses." The TSP further states the need for the City and County to "coordinate closely to address the access and movement functions of Highway 101 where adjacent vacant lands are planned for commercial use.

City of Coos Bay Transportation System Plan (2004)

The City of Coos Bay Transportation System Plan (TSP) is a multi-modal plan addressing improvement to existing roadways, new pedestrian and bicycle facilities, improvement in public transit service, and other modes, including air, rail, water and pipeline. The TSP includes a transportation improvement program, as well as changes to the City's codes and standards to implement the TSP recommendations.

The TSP includes goals and policies developed to guide the City's twenty-year vision of transportation needs. The goals of the Coos Bay TSP are as follows:

Goal 1: Transportation facilities designed and constructed in a manner to enhance Coos Bay's livability and meet federal, state, regional, and local requirements.

Goal 2: A balanced transportation system.

Goal 3: A safe transportation system.

Goal 4: An efficient transportation system that reduces the number and length of trips, limits congestion, and improves air quality.

Goal 5: Transportation facilities that serve and are accessible to all members of the community.

Goal 6: Transportation facilities that provide efficient movement of goods and services.

Goal 7: Implement the transportation plan by working cooperatively with federal, State, regional, and local governments, the private sector, and residents. Create a stable, flexible financial system.

City of Coquille Transportation System Plan (1997)

The City of Coquille's Transportation System Plan (TSP) describes the existing transportation system serving Coquille and identifies policies and implementation measures in the City's Comprehensive Plan (adopted in 1982) consistent with state and local transportation goals. The TSP also identifies relevant sections of the City's Subdivision and Zoning Ordinance.

City of Lakeside Transportation Systems Improvement Plan (1995)

The City of Lakeside's Transportation Systems Improvement Plan summarizes the local area transportation needs. The Study provides a list of transportation improvements, and changes to the Zoning and Subdivision ordinances in order to promote all transportation modes.

City of Myrtle Point Pedestrian and Bicycle Plan (1995)

This plan serves as an element of the City of Myrtle Point's Comprehensive Plan, and describes a pedestrian and bicycle system for implementation over the 20-year horizon. The Plan

contains an inventory of the existing walkway and bikeway systems in the City's urban area. The Plan's recommended implementation measures include bicycle and pedestrian ordinances, coordination and program support, potential sources of funding, and a list of projects to add to the capital improvements list.

City of North Bend Transportation System Plan (2004)

This Transportation System Plan (TSP) is a multi-modal plan that addresses improvement to existing roadways, new pedestrian and bicycle facilities, improvement in public transit service, and other modes (including air, rail, water and pipeline). The plan also includes a transportation improvement program, as well as changes to the City's codes and standards to implement the TSP recommendations.

Major components of the City of North Bend TSP include:

- Modifications to the street functional classification system to reflect current street function and development patterns.
- Modifications to the city street standards, also including access spacing criteria.
- Signal system and intersection improvements, to increase capacity in the roadway system where traffic congestion will become substantial during the next 20 years.
- Expansion of the City's system of pedestrian and bicycle facilities, with the objective of sidewalks or pathways for pedestrians on all collector and arterial streets, and bike lanes or bikeways on major collectors and arterials.
- Street improvement projects mitigating existing and predicted safety, capacity, circulation and other deficiencies.

The TSP identifies 44 transportation improvements to be implemented over the 20-year planning horizon.

North Bend Municipal Airport Master Plan (2002)

The Oregon International Port of Coos Bay updated the master plan completed in 1997 to reflect changed circumstances and situations at the North Bend Municipal Airport. The Airport Master Plan includes the two-phase series of improvements including renovation of the existing terminal for general aviation use, runway improvements and construction of a new terminal facility which is planned for completion by 2011.

There is no reference to the North Bend Municipal Airport in the Coos County Comprehensive Plan. Coos County plans to apply an overlay Airport Surfaces zone to the airport by amending the County Zoning and Land Development Ordinance.

Other Regional Area Planning Documents

The combined plan for the OR 38 and OR 42 corridors was the only regional document reviewed.

Corridor Plans for the OR 38 and OR 42 Corridors (2001)

The OR 38 and OR 42 Corridor Plans represent a cooperative effort between ODOT, local and regional governments, other agencies and the general public to outline how ODOT will manage the OR 38 and OR 42 highways over a 20 year period. The plan identifies and prioritizes the most appropriate solutions to meet the identified long-term needs of the corridor. The basis for these solutions is a review and analysis of relevant conditions and state and local policy. The plan objectives call for providing specific management direction of the corridors as appropriate, while being consistent with local Comprehensive Plans or TSP's.

The plan identifies the OR 38 and OR 42 corridors as being the primary routes for both personal/business travel and freight between Interstate 5 and Coos County and the South Coast. The plan also states that OR 42 serves as the primary arterial for the cities of Coquille and Myrtle Point. To balance the personal/business travel function and freight transport function, the plan cites access management as a key management strategy, as well as ensuring opportunities for alternative transportation modes (e.g. rail freight service, transit and bicycling and pedestrian improvements) are provided where feasible.

Major Development Proposals

Only one development proposal was reviewed as it could relate to the Coos County TSP.

Jordan Cove Energy and Pacific Connector Gas Pipeline Project (2008)

This draft environmental impact statement (EIS) is for a proposed liquefied natural gas pipeline (LNG) and supporting equipment servicing the Pacific Northwest, northern California and northern Nevada. The Pacific Connector pipeline would begin at the proposed LNG terminal in Jordan Cove (Coos Bay) and proceed generally southeast about 230 miles across portions of Coos, Douglas, Jackson, and Klamath Counties, to its end point near Malin at the Oregon-California border.

The Federal Energy Regulatory Commission (FERC), who is the EIS applicant, has indicated that there will be a standard 95-foot-wide construction right-of-way for the pipeline. A portion of the pipeline right-of-way will be adjacent to, or partially overlapping, existing utility and transportation rights-of-way (powerlines, pipelines, and roads). All areas of pipeline right-of-way construction would be temporary disturbance and would be restored upon completion.